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The Official Bulletin for the Engineering, Metals/Materials and Science/Technology Divisions and the Aerospace Section of the Engineering Division of the Special Libraries Association.

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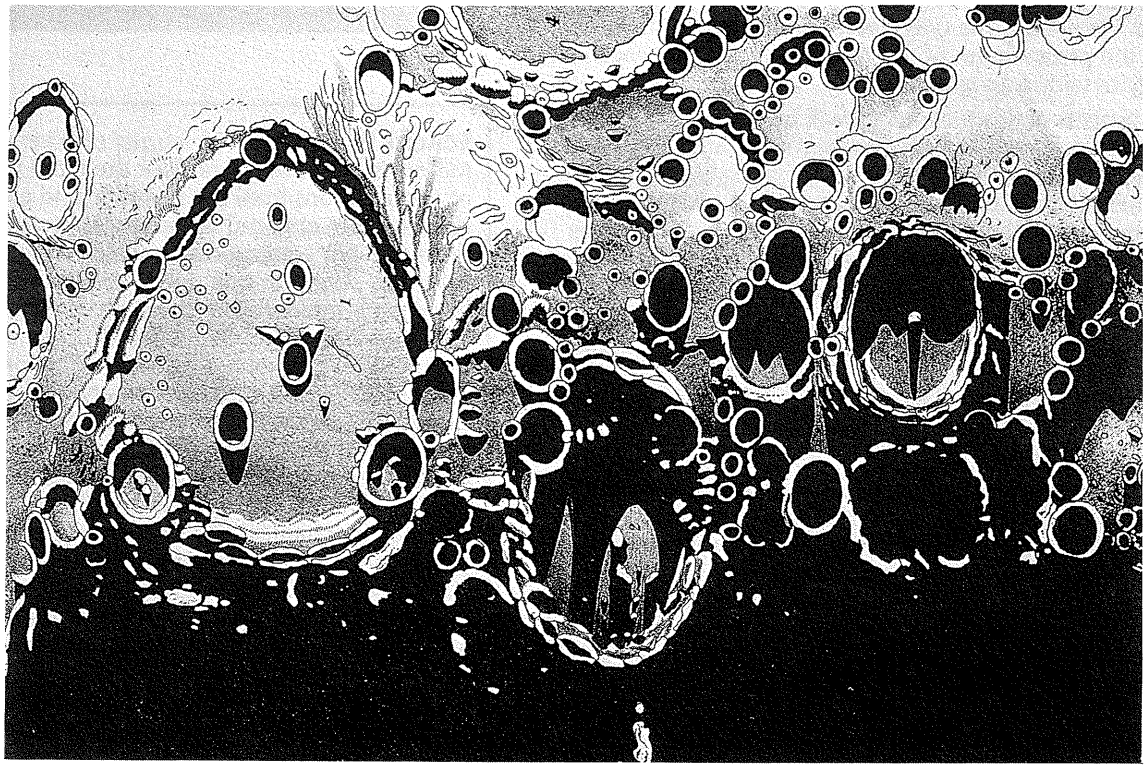

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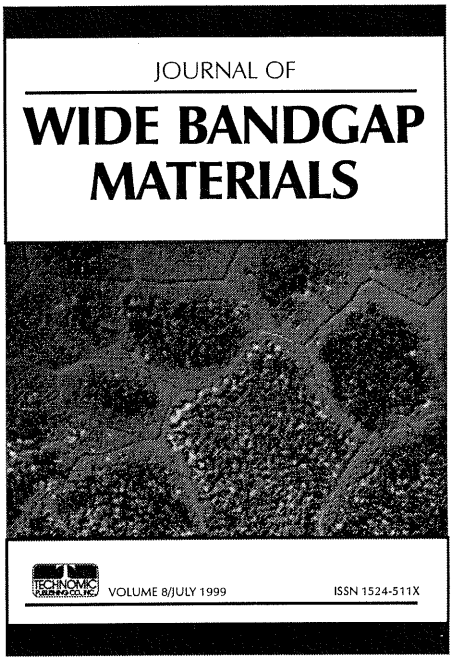
N E W J O U R N A L

JOURNAL OF

WIDE BANDGAP MATERIALS

Editor: Dr. Peter J. Gielisse, Professor, Mechanical Engineering, and Director, Materials Research & Applications Laboratory, Florida A&M University/Florida State University



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- **New developments in physics and chemistry, synthesis and processing, characterization and properties, testing, modeling, and applications**
- **All application areas covered: electronic, optical, thermal, mechanical and structural**
- **Prompt publication for timely transfer of technology**

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All significant aspects of this technology will be covered in peer-reviewed articles by recognized specialists from around the world. New developments will be reported in wide bandgap materials physics and chemistry, synthesis and processing, characterization, properties, testing, modeling, and applications. Application areas include electronic, optical, thermal, mechanical and structural.

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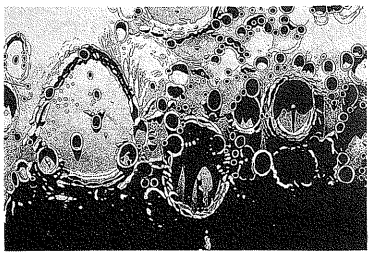

J.F. Julius Schmidt would become one of the lunar cartographers of the nineteenth century, but in 1856, when he published Der Mond, he was just beginning his illustrious career. Der Mond (Leipzig, 1856) contains two chromolithographs that are among the most dramatic of all lunar illustrations. The frontispiece, reproduced here shows a detail of sunset in the lunar highlands, with the great crater Clavius at the top. (Photo courtesy of the Linda Hall Library of Science, Engineering and Technology, Kansas City, Missouri.)

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FROM THE EDITOR

As promised in the previous issue, those attending the Annual Conference in Minneapolis found many rewarding programs to attend while the city provided numerous attractions for those able to squeeze in some sightseeing. The annual bus tour (my favorite choice for getting acquainted with the host city at conferences) was as usual well worth the time--any city with 20 lakes within its city limits has got to be worth touring. It also contains a rather startling geographical feature--the tour guide pointed out a bridge that was half-way between the North Pole and the Equator. Later, checking an atlas, it proved to be true, although hard to believe at the time.

Probably the most important step taken by the four sponsors of this journals was that of the Metals/Materials Division changing its name (and focus) to Materials Research and Manufacturing Division. The new name should broaden its scope and bring new members to its rolls. Our best wishes go to them for this step.

The lead article is a departure from our usual fare--an article that analyzes what a document is, written from the viewpoint of an information specialist, David M. Levy, who also knows how to introduce a serious topic with a scene from a Woody Allen movie--not a common strategy for such papers.

Next is Sara Tompson's article on her experience of weeding a scitech monograph collection, a topic not often found in the literature. A long-range plan for improving the holdings of Canadian research institutes, written by Richard Greene and Tim Mark, concerns the national Site Licensing Project. The last article, written by Linda Musser, presents her finding of sources for out-of-print sci-tech materials, based on a brief survey of Internet resources.

Most of the contributions from the supporting divisions include accounts of their programs and events at the Conference. In general they were all well pleased with the quality and attendance of their events.

Two units celebrated their 75th anniversary at Minneapolis.. Both the Sci-Tech Division and the Engineering Division celebrated these significant dates by sponsoring several special events, ranging from gala luncheons to a night at a theater (a fine version of a vintage Broadway musical sponsored by the Sci-Tech Division).

The Associations Annual Business Meeting went off smoothly, including several video presentations. The only criticism I heard was the fact that there was no place on the agenda for new business. Granted the meeting was long enough, but it seems regrettable that this one occasion for general comments was omitted from the agenda. In the past, such an agenda item often brought up items of vital concern to members. Annual reports are necessary and very helpful, but they and other necessary business and various awards should not take so much time that member comments and/or questions are crowded off the agenda. One last comment on the Conference printed program. A better map showing location of hotels would be welcome.

ELLIS MOUNT

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THE UNIVERSE IS EXPANDING: REFLECTIONS ON THE SOCIAL (AND COSMIC) SIGNIFICANCE OF DOCUMENTS IN A DIGITAL AGE

By DAVID M. LEVY

Editor's note: The following article is a slightly abridged version of the talk Mr. Levy delivered to inaugurate the Lazerow Lecture Series at the University of Washington's School of Library and Information Science on October 20, 1998. Copies of Mr. Levy's talk as presented at the University of Washington can be obtained from Efthimis Efthimiades by request to efthimis@u.washington.edu

I've called my talk "The Universe is Expanding. " The title is a reference to one of the early scenes in Woody Allen's 1977 movie, "Annie Hall". Little Woody Allen (called Alvy in the movie) is sitting in the doctor's office with his rmother. What seems to be the problem? "Well," his mother says with evident frustration, "he's depressed. It's something he read." "The universe is expanding," Alvy explains morosely. "The universe is everything, and if it's expanding, someday it will break apart and that will be the end of everything. " "He's even stopped doing his homework," his mother continues, with a look of total disgust. "What's the point?" Alvy counters. "What has the universe got to do with it?" his mother explodes. "You're here in Brooklyn. Brooklyn is not expanding!"

What makes this little scene so funny, like so much of Woody Allen's humor, is the juxtaposition of the mundane and seemingly trivial with the cosmic and existential . It has the quality of a Kafka parable or perhaps a Zen koan. Is the universe expanding or isn't it? In a sense they're both right, little Alvy and his mother. The mother can see concretely that Brooklyn isn't expanding. Its streets, tenements, shops and the rhythm of daily life are just the same as they've been. But Alvy is right too. Whether the universe is really expanding (after all, it's a scientific theory), the anxiety he's feeling is real enough. And that anxiety can have a very direct effect on his ability to function - to do his homework, or anything else for that matter.

But today Alvy is right in another sense as well - and in a way his mother couldn't have foreseen in 1952, or whenever this scene is supposed to have taken place. Brooklyn is expanding. The Brooklyn Botanic Garden is on the Web, where you can take a virtual tour of its gardens from just about any spot on the planet. The Brooklyn Museum is on the Web, too, as is the Brooklyn Academy of Music. There is understandably a great deal of excitement about these developments. But there is anxiety, too. Many of us, along with Alvy, are somewhat disoriented and anxious about the changes that are sweeping through our lives.

Not long ago I came across an interesting expression of this kind of anxious confusion. In *Wired* magazine, I saw a short piece called "What's a Document?" [*Wired* 4.08 (August 1996), p. 112; http: //www. wired. com/wired/archive/4.08/document. html]. "Have you noticed that the word document doesn't mean much these days?" it begins. "It didn't used to be like this," the writer, David Weinberger of the Open Text Corporation, goes on to say. In simpler times, documents were things on paper which had some official or institutional role to play. But now, alas, the term has been co-opted by the computer manufacturers, who use it to refer to spreadsheets and Web pages and multimedia presentations, as well as to text-only files. The result is a meaningless grab bag playing havoc with a once coherent notion. The fact that we can't say what a document is anymore, the writer concludes, is a clear indication of the profound changes now taking place.

What is a document? Is it true that we can no longer say what a document is? Is it true that recent technological developments have somehow broken the mold, leaving us without the security of once useful and familiar notions? These are the challenges I propose to take up now. With apologies to Mr. Weinberger, I believe we can say what a document is, and doing this can help us make sense of the what's going on around us.

What Are Documents?

One obvious place to start is with the dictionary. A quick look at a couple of dictionaries confirms Mr. Weinberger's understanding. The

Random House Dictionary defines a document as "a written or printed paper furnishing information or evidence, as a passport, deed, bill of sale, bill of lading, etc. ; a legal or official paper. " The *American Heritage Dictionary* calls a document "a written or printed paper that bears the original, official or legal form of something and can be used to furnish decisive evidence or information. " For dictionaries, the word document evidently has something to do with writing, paper and evidence.

Is this the end of the story - case closed? Well, not quite. The work of the lexicographer is to spell out the meaning of words, to describe how they are used. My own interest is less in the word document than in (what I believe to be) an underlying cultural category. Can we say something insightful about the nature of written forms without tying them necessarily to particular technologies? It's worth noting that others have traveled this route before. In a recent article, "What is a 'Document'?" [*Journal of the American Society for Information Science*, 1997, 48(9), p. 804-809], Michael Buckland explores how various pioneers in information science earlier in this century, including Paul Otlet and Suzanne Briet, grappled with the question of what a document is. Each seems to have had an intuition that there was a more basic way of looking at documents, which didn't tie them inherently to paper. Suzanne Briet, for example, went so far as to conclude that under certain circumstances even an antelope could be a document.

So what are documents? My answer is that they are bits of the material world -- clay, stone, animal skin, plant fiber, sand -- that we've imbued with the ability to speak. One of the earliest characterizations of documents comes from *Genesis*, and curiously, it is a description of human beings, not of written forms: "God formed Adam from the dust of the earth, and blew into his nostrils the breath of life, and Adam became a living soul." The parallel between this mythic event and the creation of actual documents is strikingly close. For indeed, what we do when we make documents is to take the dust of the earth and breathe our breath, our voice, into it.

This way of looking at documents is hardly new. In fact, it has quite ancient roots. It may be subtly embedded in *Genesis*, but it is explicitly stated in Plato's *Phaedrus*. Toward the end of this Socratic dialogue, Socrates and Phaedrus are discussing the nature of writing. Socrates has this to say:

You know, Phaedrus, that's the strange thing about writing, which makes it truly analogous to painting. The painter's products stand before us as though they were alive: but if you question them, they maintain a most majestic silence. It is the same with written words: they seem to talk to you as though they were intelligent, but if you ask them anything about what they say, from a desire to be instructed, they go on telling you the same thing again and again.

. Clearly for Socrates (as for Plato) written forms are pale shadows of their human counterparts. They may speak, but they are incapable of dialogue, the Socratic path to wisdom. This is true enough. But it fails to get at what is most extraordinary about written forms. For it is exactly in their ability to ensure the repeatability of their talk that they are most powerful. The brilliance of writing -- of creating communicative symbols -- is the discovery of a way to make things talk, coupled with the ability to ensure the repeatability of that talk. (Plato's formulation of repeatability, that something goes on "telling you the same thing again and again," can lead one to think that documents must preserve their talk forever. Not only is this impossible, it does an injustice to the way documents actually work. All documents are fixed and fluid, as I have argued elsewhere [Levy, D. M. Fixed or fluid? Document stability and new media. In *Proceedings of the European Conference on Hypertext Technology* '94. 1994. Edinburgh, Scotland: ACM].)

What's useful about this perspective is the way it takes the focus off the technology per se. Any technologies or media that ensure repeatability will do. For many centuries our technical means have revolved around fixing marks (symbols) in a two-dimensional substrate. But just in the last hundred years, we've figured out how to record activity (sounds and images) via film, audio and videotape. Here it can't be a question of holding marks fixed on a surface, since activity, by definition, involves change over time. What these newer technologies do is to allow us to replay -- to repeat -- patterns of sound and image. These new communicative forms, to use Plato's words, "go on telling you the same thing again and again. " A different technological means is being used to achieve the same end.

This way of looking at documents also sets up a strong parallel between documents and people. Each in their own way are talking things. This is hardly an accidental parallel. Documents are exactly

those things we create to speak for us, on our behalf and in our absence. And in speaking for us, they take on work, they do jobs for us. And not unlike people, they often wear uniforms which broadcast the roles they're intended to play. A newspaper, a cash register receipt, a greeting card, a detective novel -- each of these has a distinctive look that's meant to signal what it's for and the kind of content it's meant to carry. What I'm talking about, of course, is genre, a term heavily used in literary and communication theory. Each document genre is essentially a specialized form of talk, tailored to operate in particular circumstances. It's the specialization of form and content to do a certain kind of work in the world.

The larger point is that documents are social actors. They have a social life, to use Brown and Duguid's phrase from their article "The Social Life of Documents" [*First Monday*, 1996, 1(1) http://firstmonday. dk/issues/issue1/documents/]. They participate in our world, the human lifeworld, where they talk for us and do work for us. If we only focus on the things themselves (their form and content) or on the technologies out of which they're constructed (paper, ink, printing presses, computers), we'll miss where the real action lies, literally and figuratively. To do justice to documents, to make sense of them, we need to appreciate their socio-technical nature. This means seeing how particular technologies are marshaled to serve particular social purposes.

The Power of Documents: Documents and Social Order

Implicit in what I've been saying is that documents are powerful. They are power objects. To see this, let's first notice that speech itself is an exercise of power. We talk about free speech as an essential democratic right. In phrases like "speaking out," "having a voice" and "giving voice to," it's clear that what's at issue is the political dimension of life, the exercise of power.

Documents speak out, and by fixing their talk or otherwise making it repeatable, they make it possible for many people to hear what they have to say. Any document can be analyzed in terms of the power it exerts: whose interests it is serving, what work it is trying to do, who it is trying to convince, cajole or influence. But to get a feel for the sheer magnitude of the power documents exercise, we need to look at them collectively rather than individually. We need to see them in aggregate. To begin, let's notice how pervasive documents are. They are basically everywhere - in all corners of our lives.

But we might cast this observation slightly differently by noticing the crucial role documents play in all our major cultural institutions. Science, law and government, religion, education and the arts, commerce and administration all rely on the stabilizing power of documents to accomplish their ends. In the form of books and journal articles, documents are carriers of scientific knowledge. As sacred scripture they are the central artifacts around which religious traditions have been organized. As written statutes, charters and contracts they play a crucial role in constructing and regulating lawful behavior. As works of literature, paintings and drawings, they are the tangible products of artistic practice. As textbooks and student notes, they are crucial instruments around which learning practices are organized. As receipts and accounts, memos and forms, they are critical ingredients in the way commerce, and indeed all bureaucratic conduct, is organized. In each of these cases the ability to hold talk fixed -- to provide communicative stability -- is crucial.

These institutions are essentially the cultural mechanism by which we create and maintain a meaningful and orderly social world. Science and religion, each in its own way, are quests for meaning, order and intelligibility. Media, the arts and entertainment are also means by which we tell ourselves (and continually reinforce) stories about who we are and why we're here. Education is concerned with socializing our young -- bringing them in to the social order we've constructed and training them to carry the meaning-making and order-making project forward. Government, law, commerce and administration are all about regulating human conduct √ the exchange of goods and services, the orderly procession of human affairs.

Through their extensive role in all these institutions, documents therefore play a crucial role in supporting -- in making and maintaining -- the social order. To do this is indeed to exert a great deal of power and influence.

But documents not only support the social order, they themselves are part of it. They themselves need to be tended and taken care of, just like everything else in our world. Without physical maintenance, documents will decay. Without constant organizing, they will become

inaccessible. And without organized practices for accomplishing these aims the work would be daunting and unmanageable. This is where libraries come in. Libraries have had the responsibility for keeping certain classes of our documents in line and in order. I say "certain classes" because the work of the modern library (from the second half of the 19th century to the present) has been centered around the book. Its primary order-making practices -- including cataloging and classification, reference services and conservation -- were developed in support of the codex (the bound book) and its derivatives, such as newspapers, magazines and other periodicals. These practices don't appear to accommodate digital materials readily. It is all very disorienting and confusing.

Digital Documents

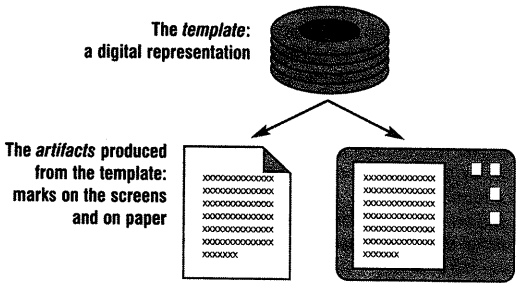
Talk about confusion: the technology itself can be remarkably disorienting. Operating systems, application software, hardware configurations, service providers -- it's quite a tangle of products, standards and practices. Anyone wanting to venture online these days has to master, or at least to become conversant with, a whole new technical language. And it's so easy to get swept up in the maelstrom and fail to see what's going on. But when you clear away the surface clutter, you discover that the technology is actually quite simple.

The computer, at least when used as a writing tool, is basically a souped-up printing press. The printing press works by separating the printing plate from the printed images which are produced from it. This is a powerful idea: one plate can be used to produce a large number of identical images. Before the invention of movable type, the plate might be a single block of wood or some other durable material in which the desired image had been carved. Movable type was a further innovation on this idea, making it possible to create composite plates out of reusable component images (the type).

This simple but profound split -- between a template and the artifacts produced from it -- is how digital materials are structured. (See figure.)

In the digital case, the template is a digital representation: a sequence of ASCII character codes, a bitmap or some other more complex representation. This is the material (the bits) you

Figure: The split between template and artifact



find on a floppy disk, a hard drive, a fileserver or some other storage medium. But while the digital representation, the digital template, is necessary, it isn't sufficient. Much like the printing plate, the digital template has a purpose outside itself: to produce marks or images on screens or on paper (or to produce sound in the airwaves). Figure: The split between template and artifact.

The computer is therefore a generalized printing press, able to "stamp out" text, images and sounds in a variety of media. Digital developments aren't actually as revolutionary as some would have us think. Instead, they are part of a long and continuous process of social and technological innovation. By creating digital representations which can be easily manipulated and shipped around, we've bought ourselves the ability to do more, faster, further, cheaper, in greater quantity (and possibly) better.

These are considerable achievements, but they are not without cost. The split between digital template and product leads to problems that are as yet ill understood -- and certainly far from solved. Digital representations require a complex of highly sophisticated and temperamental hardware and software to produce things that people can actually use. Digital materials are therefore vulnerable to the idiosyncratic and only partly controllable details of their immediate environment. If you've ever tried to print a document outside your usual locale, you know exactly what I'm talking about. (And anyone who thinks that HTML or XML or some other standard will make this go away has not been paying attention.) How will we come to terms with this new vulnerability? The problem extends beyond immediate printing and viewing to preservation. What exactly must we try to preserve? If we just preserve the digital representation, there is no guarantee that appropriate hardware and software will be available at some indefinite future time. But even if we find ways to preserve (or to reproduce on

demand) some version of the technical context, the relevant hardware and software, this still doesn't guarantee that what is tangibly produced will be adequate. And this is hardly the only technical challenge waiting to be resolved.

More Than Technology

But we will miss the point if we focus only on the technology. As I suggested earlier, documents are socio-technical - they are technologies taken up in the service of social purposes. To look at the technologies alone, or at the artifacts made with them, is to miss where the action is. At the moment, we are working out how to make and use new kinds of talking things - digital talking things. This means more than just working out the technical details of editing, distribution, preservation and so on. It means working out the specialized forms of talk, the new genres, in relation to the institutional structures and social practices in which these forms will operate. It's no wonder that David Weinberger is confused. We've had a long time to work out paper-based genres and their associated work practices. But their digital counterparts are in their infancy: digital genres are still emerging (what are home pages?), they are fluid and their relation to practice is still being worked out. He is right in thinking that something new is afoot and right in noting that the new forms violate the dictionary definition of document. But he is wrong in thinking that current developments violate a deeper sense of what documents are all about.

Nowhere can this turmoil be seen more clearly than with respect to library practices. As I noted earlier, libraries have had the job of ordering and stabilizing certain classes of documents - primarily books and certain other specific forms on paper. But libraries use documents to maintain documents. The emergence of digital materials introduces uncertainty into both document domains: the collections they maintain and the internal documents they use to maintain them. Libraries are therefore in the position of needing to figure out what to do about materials on the Web (how to catalog Web pages, which ones to catalog, how and when to provide reference services to online materials, etc.), and also how best to make use of these same kinds of materials (Web-based catalogs, for example) to support their own internal practices. It isn't even clear whether libraries as we now know them will survive.

No wonder it is an anxious time for libraries and for librarians. But it isn't just librarians who are feeling this way. All of us, I believe, at some level can identify with little Woody Allen's concerns in "Annie Hall". The universe is expanding - technologically, at least. We are anxious in part because we can't yet see what these changes will mean for our lives -- for our careers, for our children's futures, for our sense of order and well-being. At such a time, it is crucial that we move beyond a limited focus on technology to the social questions, the questions of order and meaning in which our written forms play such an important part. What kind of lives do we want to live? What kind of social order do we want to be part of? To what extent are the technological choices we are now making consistent with the character and quality of life we hope to maintain or to achieve?

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WEEDING A SCITECH MONOGRAPH COLLECTION

By SARA TOMPSON
Fermi National Accelerator Laboratory (Fermilab)

I decided to tackle weeding of the main monograph collection in our sci-tech library during the summer of 1998. The library collection is focused on high-energy physics, but also includes engineering, computer science and environmental health and safety resources. The Library was developed during 1972-73. The collection had never been weeded! By last summer, I had been at the library long enough to note that many of the books were 30 and even 40 years old (some were donated at start-up), and many of these (as well as some others) were not being used. Plus, we were running out of shelf space. Clearly a pruning was long overdue!

My Library Advisory Committee has instilled in me data gathering and analysis techniques, so I knew I would need to systematically gather information both on the characteristics of our monograph collection, and on the body of literature on collection weeding. To get a more rigorous handle on collection usage, I worked with our Systems Librarian to create a (long) list of all materials uncirculated for at least the past four years. This was the quantitative data.

Weeding based on usage is a common library practice. A number of studies have supported this approach. See, for example:

Trueswell, Richard W. "Growing Libraries: Who Needs Them? A Statistical Basis for the No-Growth Collection" *In*: Gore, Daniel, ed. *Farewell to Alexandria: solutions to space growth and performance problems of libraries*. Westport, CT: Greenwood Press; 1976; p. 72-104.

Reed, Lawrence L. and Erickson, Rodney. "Weeding: A Quantitative and Qualitative Approach." *Library Acquisitions: Practice and Theory*. 17:175-181;1993. (Usage data discussed on pp. 175-176).

"One rule of thumb suggests that fewer than six circulations in one year makes a book a good candidate for discarding." Carey, Cathy. Survival weeding. *Collection Building*.10 (3-4); 20;1990.

However, the best practice is now generally thought to be a combination of quantitative and qualitative approaches to weeding. Guidelines in a collection development policy, while more typically applied to acquisition, are just as appropriate for weeding or deselection. These can be combined with circulation data. An especially useful article on this combined approach is:

Joswich, Kathleen E.; Stierman, John P. Systematic reference weeding: a workable model. *Collection Management*. 18(1-2); 103-117; 1993.

These authors note that: "A collection development policy ...[should] provide a theoretical basis for weeding decisions." (p.107). I developed our weeding guidelines to include the topical areas covered in our collection development policy, plus the following considerations:

* Relevance
* Usage
* Cost-effectiveness
* Currency of material
* Authority (i.e., is it a trusted source)
* Coherence of series.

After discussing the planned weeding project at length with both the Library staff members and the Library Advisory Committee, these additional points were added to the weeding guidelines:

* Retain books by authors of renown
* Retain books by authors with Fermilab connections
* Avoid multiple copies of all but very heavily used works (i.e. weed duplicates of most items)
* Retain a book if it is the only representative of a topic (until we can buy newer books)
* Consider whether or not Fermilab is the only OCLC holding location (lesser consideration than the above, as we are not

charged with archival responsibility, nor do we have as broad a mission as a university library)

The library literature on weeding covers mainly academic and public libraries. Almost all of the stories I found of library users' disgruntlement or even violent protest over weeding took place in public library settings. See for example Murray Martin's discussion of the Library Friends group protesting at the San Francisco Public Library and the City Controller of Philadelphia assailing the Philadelphia Free Library (in his "Weeding or Deaccessioning' in *Technicalities.* 17(7): 16; 1997. One article did note faculty issues with weeding: "Faculty member who are not invited to participate and who do not understand the process used [in weeding] tend to distrust the process and develop negative feelings about it." (Reed, Lawrence L. and Rodney Erickson. "Weeding: a quantitative and qualitative approach. *Library Acquisitions: Practice and Theory."* 17: 179; 1993. Nevertheless I did not anticipate problems with our user population, particularly because the Library Advisory Committee was supportive.

I don't want to go into excruciating detail of our difficulties. I worked hard to get my department manager's and her boss' support before the project, and did. I also got the Library Advisory Committee's buy-in, as mentioned above. I should have worked harder with staff and with the whole user population! After I actually started removing some books from the collection, some unexpected protests arose, both from library staff and from users. Some of these protests were right to top management, and our fist inkling of the complaints came when my boss was called in to explain the project!

The protestors were all focused on books as books; they were opposed in principal to discarding any books. I came across the following article while in the midst of dealing with these protests, and found the author's words practical and supportive. She likens a bibliophile to a "gourmand" (indiscriminate love of books) and a librarian weeding a collection to a "gourmet" (a selective lover of books)! In an article discussing her weeding project, she admits to being naturally a gourmand, but converting to a gourmet for the sake of her information service: "Bluntly, my responsibility to the quality of information I provide to our students is greater than my responsibility to the books _**qua**_ books." Berson, Robin, "Schools of thought: to weed or not to weed." *Wilson Library Bulletin.* 69(10): 71, 1995 June.

Besides digging even deeper into our professional literature for guidance while dealing with these protests, I also called my PAM Division chair, Brenda Corbin, and offered to do a panel on weeding at the next SLA conference. I really wanted to share my lessons learned to save some colleagues some pain! This article is based on that presentation, entitled "Gardening Tips for Painless Collection Weeding," which was presented June 7, 1999 in Minneapolis. An overview of that presentation is on the Web at: http://web.wwa.com/~sarat/pamweed/

To conclude this overview of my experience: my boss and I met or talked with the main protestors, as well as with top management, and eventually calm was restored. Some key lessons learned from this experience include:

* Cultivate trust and communication with your staff on the issue of weeding
* Realize that many who work in libraries do not do well if they are uprooted from a routine with little warning
* Coach your staff to handle change, and to roll with the cycles of a library and its collection
* Get management support (this is especially critical if you are in a special library that is part of a non-library organization)
* Cultivate trust and communication on the weeding issue with your Library Committee-- explain the necessity of deselection in order to allow for useful acquisition. Some libraries have even gotten Library Committee members very involved in reviewing potential discards (I had our Committee provide recommendations for replacement materials)

As Reed and Erickson (on p. 179 in their "Weeding: A Quantitative and Qualitative Approach," cited above) note: "By having a clear, defensible procedure, even faculty [and staff, I would add] who are opposed to weeding can be made to see the necessity of judicious weeding for effective collection development."

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CANADIAN NATIONAL SITE LICENSING PROJECT
By RICHARD GREENE and TIM MARK

Canadian researchers will in time have greater access to published research. A $20 million grant will improve dramatically quantity, breadth and depth of available electronic journals in Canaian universities. The cause for this is due to the news that The Canada Foundation for Innovation will provide $20 million over three years to fund the Canadian National Site Licensing Project (CNSLP). The project is spearheaded by the Canadian Association of Research Libraries (CARL) and will be administered by the University of Ottawa.

The goal of the CNSLP is to dramatically increase the quantity, breadth and depth of the most current research literature available to Canadian academic researchers. A national consortium of 64 Canadian universities will negotiate with journal publishers and vendors to obtain pan-Canadian site licenses for electronic versions of scholarly journals mostly in scientific disciplines.

"To remain internationally competitive, Canadian researchers require speedy and convenient access to the primary scientific, engineering, health, and environment research literature," said Dr. Howard Alper, University of Ottawa's Vice-Rector, Research, who heads the CNSLP steering committee. "National site licensing has the potential of providing this type of access for over 34,000 university researchers and 76,000 graduate students in Canada."

"This is wonderful news," said CARL president, Frances Groen, following the grant announcement.. "Canada's researchers will benefit immeasurably from this national initiative. Now researchers across the country will enjoy equal access to research literature and findings." The CARL headquarters are housed at the University of Ottawa.

By uniting their efforts under the CNSLP, institutions will greatly increase their buying power and will be able to negotiate better contractual terms to gain access to a much larger body of published research. In addition, they will improve accessibility through electronic delivery of research material, which creates the possibility of national digital library services. A decade of double-digit price increases from publishers, proliferation of publications and rapid technological innovation in electronic publishing provide a powerful impetus to transform library systems. The use of information technology is accelerating the pace of the entire research cycle. There is a growing shift from the distribution of research results in print format to its rapid dissemination through electronic networks. Increasingly, libraries no longer purchase individual journal titles in print format. Instead they enter into license agreements with publishers or vendors to gain access to journal collections via electronic means. This is called site licensing.

In recent years, Canadian libraries have entered into site licensing arrangements at the provincial and regional levels. The strategy worldwide, however, is toward national site licensing. Because the Canadian academic market for electronic publications is relatively small, it is crucial to consolidate the negotiating and buying power of academic libraries to reduce costs.

The project funding from the Canada Foundation for Innovation (CFI) comes from the Institutional Innovation Fund. The $20 million grant will cover about 40 percent of the cost of the CNSLP, with the remaining $30 million coming from regional or provincial partners and the 64 participating institutions. CFI is a corporation established by the federal government to strengthen Canadian capability for research. Its mandate is to increase the capability of Canadian universities, colleges, hospitals, and other not-for-profit institutions to carry out important world-class scientific research and technology development. Information:

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OBTAINING OUT-OF-PRINT SCI-TECH MATERIALS: A BRIEF SURVEY OF INTERNET RESOURCES

By LINDA MUSSER

The World Wide Web has greatly simplified the process of locating out-of-print (o.p.) materials. Used book dealers worldwide list their holdings on the Internet, and metasearch engines allow simultaneous searching of thousands of dealers' stock. Government and commercial repositories provide access to out-of-print technical reports, standards, theses and dissertations. Even publishers have begun to recognize the market for o.p. material by facilitating granting of copyright permissions. The resources listed below are a sampling of some of the many tools available on the Internet for obtaining o.p. material. Specialty resources for locating o.p. periodicals are not covered in this piece.

Out-of-Print Dealers and Bookstores

BookFinder.com - www.bookfinder.com
This resource searches the holdings of new and out-of-print book databases and presents a combined result. Databases searched include Advanced Book Exchange, Powell's Books, and others.

Advanced Book Exchange - www.abebooks.com
This site claims it is the world's largest source of out-of-print books with over 13 million titles.

Alibris - www.alibris.com
This reseller taps into the holdings of over a thousand small out-of-print dealers and re-sells their titles directly and via services such as Amazon.com.

Antiquarian Booksellers' Association of America - abaa.org
The ABAA Booknet specializes in rare and antiquarian books, maps and prints.

Bibliocity - www.bibliocity.com
This site provides access to "Leading International Antiquarian Booksellers" holdings.

Bibliofind - www.bibliofind.com
This service allows o.p. dealers to list their holdings on the Web. Current size is listed as over 9 million titles.

Powell's Books - www.powells.com
This megabookstore, based in Portland, Oregon, has an immense collection of technical books. Estimated size is 1.5 million titles.

Additional web sites and catalogs of individual bookstores and used book dealers can be found at:

Yahoo's Booksellers page - dir.yahoo.com/Business_and_Economy/Companies/Books/Shopping_and_Services/Booksellers/.

AcqWeb's Rare and Antiquarian Book Venders list - www.library.vanderbilt.edu/law/acqs/pubr/rare.html.

Repositories

National Technical Information Service- www.ntis.gov
This agency is a source for technical reports, proceedings, and other sci-tech information produced by or for the U.S. government as well as similar material from some international and non-governmental sources. Database size is approximately 3 million titles.

University Microfilms, Inc. - www.umi.com
UMI offers a books-on-demand printing service for o.p. books in their repository plus a similar service for theses and dissertations. They have approximately 140,000 book titles and 1 million theses/dissertations.

Global Engineering Documents - global.ihs.com
This company offers access to current and older standards and specifications from around the world. Title list is approximately 1 million items.

Other Avenues

If an item is not immediately available for purchase, many of the o.p. dealers and services

listed above are able to accept want lists. For a small fee, these services will continue to monitor their databases for requested titles. If that option fails, it is possible to acquire copyright permission to reproduce an o.p. item. After making a reasonable attempt to purchase a copy of the item, you may contact the copyright holder to request permission to copy the item, pay the copyright fee (usually less than $15.00), borrow the item, and make a copy.

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SCIENCE-TECHNOLOGY DIVISION

The objectives of the Science-Technology Division shall be: to draw together those members of the Special Libraries Association having an interest in the role of library and information science as applied to the recording, retrieval and dissemination of knowledge and information in all areas of science and technology; and to promote and improve the communication, dissemination and use of such knowledge for the benefit of libraries and their users.

FROM THE CHAIR

WEI WEI

I am looking forward to working with all of you in the exciting up-coming year. The theme of the Philadelphia conference in the year 2000 will be **"Independence to Interdependence: The Next Phase in the Information Revolution."** In order to meet the challenges during the next phase, I encourage the membership, our fellow information professionals, to gather creative ideas and bring them to me throughout the year so that we can move forward in realizing our goals. By doing so, together we are "helping to create tomorrow's history today".

Goals

My goals for the Division for the incoming year are outlined as follows:

1. To retain, recruit and expand the membership of the division.
2. To seek to refine our conference programs and professional development courses.
3. To continue updating the Division's strategic plan.

Objectives

Membership

As the Chair of the Science and Technology Division for the year of 1992/93, Richard Hulser had a goal that was to "expand focus of internationalism, and to concentrate recruitment of people of many backgrounds to our profession. We are in a global environment of access and dissemination of information. Our multicultural diversity needs to be reflected in the broad membership and activities of the Division". Looking back and thinking ahead into the next century, this statement is still refreshing. I would like to invite information professionals from different backgrounds in the area of science and technology to join us and to become part of the membership.

In order to achieve the membership goal, it is anticipated that more work can and will be done in both retaining and recruiting new members to the division. Working with Nathalie Thirlwall, Membership Committee Chair and committee members, a survey will be created and sent out to discover what activities members would like to see in the Sci-Tech Division. This would better ensure that our members' needs are met. With the help of Polin Lei, Medical Library Association Liaison, Theo Jones-Quartey, SLA Affirmative Action Caucus Liaison, Suzanne Fedunok, International Relations Committee, and Nancy Anderson, Division's Global 2000 Conference Planner, the committee will reach out to potential members in minority and international communities this year.

Conference Planning

I have appointed Ann Koopman as our conference planner for Philadelphia in the year 2000. Ann Koopman who has already created a Web site (http://jeffline.tju.edu/~koopman/scitech2000/) for the conference programs is working very hard with her committee members to finalize the year 2000 conference plan. For the first time, the division will host a contributed paper session in Philadelphia. The theme of the paper session is "the Distributed Sci-Tech Librarian: Models for Remote

Information Services ". Any SLA member is encouraged to participate in this discussion. Please send your abstracts to Ann Koopman, Thomas Jefferson University, Scott Memorial Library, 1020 Walnut Street, Philadelphia, PA 19107, V: 215-503-0441, F: 215-923-3203, Email: ann.koopman@mail.tju.edu, Conference Planning Committee of the Science and Technology Division by October 1, 1999.

The Division will continue to provide a professional development class on "Introduction to Patents" at the year 2000 annual conference. Meanwhile, Pam Enrici, Professional Development Committee Chair is working on one or possibly two other continuing education courses. Please let Pam Enrici know if anyone has any suggestions regarding this matter. She can be reached at University of Minnesota-Duluth Library, 10 University Drive, Duluth, MN 55812-2496, V: 218-726-8586, F: 218-726-6205, Email: penrici@d.umn.edu.

Strategic Plan Update

In order to meet the professional challenges during the "next phase of information revolution", we need to continue updating Division's strategic plan. A well written marketing plan for the Division also needs to be included into the over all five-year plan which contains Science and Technology Division's mission, vision, and environment. John Cruickshank, Strategic Planning Committee Chair and his committee will report on progress and host a strategic planning update program at the Philadelphia conference. It is hoped that the Division's strategic plan will be approved by the Executive Board and be distributed as a handout during the year 2000 annual conference. For marketing purposes, Billie Conner, Public Relations Committee Chair and her committee will also develop a handout on the history of Sci-Tech Division for distribution at the year 2000 conference.

Working Together toward the Goals

I feel grateful that I have a group of dedicated and outstanding committee chairs, liaisons and Division members to work with this coming year. The "Knowledge Leaders for the New Millennium" conference last June was rewarding and exciting. As the Sci-Tech Division continues to evolve into "the Next Phase in the Information Revolution", let's look for new and exciting conference programs and enhanced continuing education courses at the 91st Annual Conference in Philadelphia and Global 2000 in England. Let's define Sci-Tech Division's strategic plan in facing many more future professional challenges. Let's invite information professionals with different backgrounds in the area of Science and Technology to join us. I am truly honored and proud to be your assistant. Finally, let's work together toward our goals.

Knowledge Leaders for the New Millennium

The Science Technology Division's program at the "Knowledge Leaders for the New Millenium" conference last June was truly diverse, educational and excellent. It was the conference to celebrate the Division's 75th anniversary. A series of events including "Sci-Tech's 75th Anniversary Main Speaker, Dr. Kathryn Sullivan", "Good Times!, the Sci-Tech Division's 75th Anniversary Night Out", "Sci-Tech's 75th Anniversary Luncheon", were presented at the conference. Other informative programs such as "MnLink" and "Data Mining" were well received. I would like to take this opportunity to thank Pam Enrici, for her hard work for organizing the 1999 conference programs. I sincerely feel grateful for Ann Koopman and James Manasco's willingness to take notes and to summarize the major Sci-Tech Division's events at the conference. The following summary provided by Ann Koopman is about our outstanding event, "Sci-Tech's 75th Anniversary, with keynote speaker, Dr. Kathryn Sullivan".

SCIENCE-TECHNOLOGY DIVISION's
75th ANNIVERSARY SPEAKER
Dr. KATHRYN D. SULLIVAN
By Ann Koopman

The Science and Technology Division of SLA celebrated its 75th anniversary with a special guest speaker: Kathryn D. Sullivan, Ph.D., noted scientist and educator. Dr. Sullivan is a three-time space shuttle astronaut and the first woman to walk in space; she has mapped deep ocean for the National Oceanic and Atmospheric Administration; and she is currently president and CEO of COSI (Ohio's Center of Science & Industry), an innovative science museum program. She spoke on the theme of exploring frontiers and expanding scientific knowledge through discovery.

Dr. Sullivan took her rapt audience on a

tour of her experiences in outer space, extensively illustrated with Behind-the-scenes photos. She also described the exacting, repetitive, and painstaking technical work underlying the each mission. For example, she was a member of the team which constructed the repair & maintenance protocol and tools for the Hubble telescope. The project resulted in a huge amount of documentation and lasted through repeated trials under all kinds of simulated conditions, but on that tedious work rode the success of several subsequent shuttle missions and the ultimate usability of the telescope itself.

Dr. Sullivan emphasized the team nature of NASA's work, and the interdependence of the flight crews and their scientific support staff. She also exhibited the warm good humor, which has carried her through many assignments and trials..

After her 3 flights for NASA, Dr. Sullivan, who is a geologist by training, moved to the NOAA as chief scientist. She discussed some of the NOAA's work on mapping the ocean floor, especially around the planetary rift mountain chain. The vehicle used for this work is as specialized in its own environment as the space shuttle is for space. But instead of withstanding the vacuum of outerspace, the ALVIN deep sea explorer withstand the tremendous pressures and movements of water. In addition to improving understanding of plate activities and mountain building, deep sea exploration has overturned scientific thought about life forms. One unexpected result of the mapping project was the discovery of the Archaea -- a new life category that is neither plant nor animal. Dr. Sullivan regards the work of deep sea exploration as the exploration of earth's inner space frontier.

Finally, after years of practicing science, followed by years as a science administrator, Dr. Sullivan has turned to education. Since 1996, she has headed the COSI program of Ohio. COSI is building a unique science literacy program for children of all ages, based on principles of discovery learning and active engagement. As an individual, Dr. Sullivan translates her own experiences for audiences like SLA and serves as a role model for aspiring young scientists. Through COSI, however, she can influence the ways in which science is experienced by a larger audience. She speaks of connecting children with the joy of understanding their world. This very determined Administrator is building a new museum facility, and is inspiring the citizens of Ohio and beyond to engage with her in the project. She certainly inspired all of us in the SLA audience.

From the Projects & Publications Committee
David Duggar, Chair

Now is the time to start thinking about the research project you've had on the backburner. The Projects & Publications Committee reviews projects suggested by members and makes recommendations to the Sci-Tech Division Board regarding sponsorship and financial support for such projects as the Board approves. A complete time schedule for proposals, review process, and recommendations will appear in the November issue of *Sci-Tech News*. Start brainstorming today!

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SCIENCE-TECHNOLOGY DIVISION
MINUTES OF MEETINGS, MINNEAPOLIS, MINNESOTA

EXECUTIVE BOARD MEETING
June 5, 1999

CALL TO ORDER

The meeting was called to order at 4:02 p.m. by Howard Stephen McMinn, Chair.

WELCOME AND INTRODUCTIONS

All meeting attendees introduced themselves. The following were present: Nancy Anderson, Billie Connor, John Cruickshank, David Dugger, Pamela Enrici, Bonny Hilditch, Janet Hughes, Ann Koopman, Joe Kraus, Eleanor MacLean, James Manasco, Dorothy McGarry, Howard Stephen McMinn, Ellis Mount, Jean Piety, Nathalie Thirlwall, Wei Wei. Linda Broussard, Special Libraries Association staff, was present as a brief observer.

ANNOUNCEMENTS

The Chair announced that the "Impossible" Award would be presented at the Annual Business Meeting to the Division's Program Planner, Pamela Enrici.

APPROVAL OF MINUTES

Motion was made by Nancy Anderson and seconded by Eleanor MacLean that the minutes of the Executive Board meeting of June 6-7, 1998 be approved as published in the August 1998 issues of Sci-Tech News (with one correction to a typographical error on page 24, line 9 under REPORTS:..."The award is to"). (No vote was required per the Parliamentarian.)

AWARDS

$2000 was granted (in lieu of the usual $1000) for the International Award. Luis Herrera, who was unable to attend the 1998 Indianapolis Conference, came to the 1999 Conference, and Cristina Lewis was the 1999 recipient. The Global 2000 Travel Award will be advertised at the same time as the Sci-Tech Division advertises the Philadelphia Conference.

PROCEDURE MANUAL

Nancy Anderson discussed the work to be done and recommended: that the Membership Committee be considered as two parts (Recruitment and Welcoming and Retention) with perhaps two co-chairs; the WebMaster and Listserv Manager should have a stated working relationship; and that the Networking Committee make-up be the Editor, Sci-Tech News, the WebMaster and the Listserv Manager by virtue of their positions. The decision about the Membership Committee was made that Recruitment and Retention responsibilities be assigned within the Committee and that there be only one chair. First-timers will be queried as to why they joined.

PROGRAM

Pamela Enrici summarized the problems with program planning for the Minneapolis Conference, particularly the web version of the program and the preliminary program. The Incoming Executive Board meeting failed to make the final program and was announced for Wednesday, June 9, Hyatt Hotel, Lake Minnetonka room. CE courses held were Patents I (18 attendees) and Patents II (10 attendees); the ISO course was cancelled. Recommendations for handling the International Award in future were that the Awards Chair host the recipient and that the recipient speak briefly at the Annual Business Meeting and write impressions of the conference for publishing in Sci-Tech News. The Student Relations Chair would host the recipient of the student essay stipend award and similar reporting would be done by the award winner. Howard Stephen McMinn will see that this is recorded in the Procedure Manual.

There was resounding applause for Pamela Enrici for the fine work on program planning.

BYLAWS

Eleanor MacLean distributed amended draft bylaws. The Executive Board was asked to review the draft to determine preferences. Billie Connor made a motion, seconded by Janet Hughes, and carried that Article IX, Section 2 not be revised but be retained in its original form. To Article VII, Section 2 an addition was made: "This limitation on terms of office does not apply to the Archivist or Sci-Tech News positions." Billie Connor made a motion, seconded by Nancy Anderson, and carried

that revisions as discussed and revised be accepted, (with the exception of Article I, Section 3 which requires further consideration). A deadline of July 15, 1999 was established for the Executive Board decision on Article I, Section 3.

GLOBAL 2000

There was discussion of Division program plans for Global 2000 under the direction of Nancy Anderson. Motion was made by Billie Connor, seconded by Wei Wei, and carried (with one abstention) that the travel stipend of $1000 normally given to the Program Planner at the Annual Conference to be given also to the Global 2000 program planner. Nancy Anderson will write an article for Sci-Tech News summarizing her impressions of Global 2000.

CE COURSES

Discussion of CE courses was extended.

The meeting was adjourned at 6:00 p.m. until Executive Board Meeting, Part II, Sunday, June 6, 1999, at 4:00 p.m.

Billie Connor, Secretary

EXECUTIVE BOARD MEETING
PART II
June 6, 1999

CALL TO ORDER

The meeting was called to order at 4:06 p.m. by Howard Stephen McMinn, Chair.

ATTENDANCE

The following were present: Nancy Anderson, Virginia Baldwin, Billie Connor, John Cruickshank, David Duggar, Pamela Enrici, Suzanne Fedunok, Bonny Hilditch, Janet Hughes, Ann Koopman, Joe Kraus, Mary Frances Lembo, Eleanor MacLean, James Manasco, Sonia Cawsey McGowan, Jean McKenzie, Howard Stephen McMinn, Ellis Mount, Bonnie Osif, Jean Piety, Anna Ren, Marsha Saylor, Judith Siess, Charlene Stachnik, Nathalie Thirlwall, Wei Wei, Nancy Wilmes.

BYLAWS

Discussion of Article I, Section 3 resulted in the following plan: 1) posting on the Executive Listserv for input; 2) conference call to Executive Board for vote; 3) results delivered to Science-Technology Bylaws Committee by July 15; 4) Bylaws Committee prepares amended Division Bylaws for submission to Association Bylaws Committee for review.

SCI-TECH NEWS

Discussion of the forthcoming resignation of Ellis Mount as Editor, Sci-Tech News, and the need for a new Editor was held. Bonnie Osif volunteered to be Editor (if there were no other candidates). Ellis Mount recommended Ms. Osif. Judith Siess offered to assist as an unpaid volunteer as needed. Billie Connor made a motion, seconded by Wei Wei, and carried to name Bonnie Osif as the Editor of Sci-Tech News upon Ellis Mount's resignation. Ellis Mount indicated that he would be willing to continue as Book Review Editor of Sci-Tech News with a stipend. Judith Siess made a motion, seconded by Billie Connor, and carried that Ellis Mount be appointed as Book Review Editor with a stipend of $1000 per year. Congratulations were extended to both Bonnie Osif and Ellis Mount.

PROCEDURE MANUAL

Nancy Anderson announced that replacement pages are available to appropriate committees and that they will be mounted on the website.

GLOBAL 2000

Nancy Anderson described the Washington DC Chapter's project to shepherd travel stipends for persons from developing countries to attend the Global 2000 Conference in Brighton, England. Registration costs approximately $525, a major expenditure.

A motion was made by Billie Connor, seconded by Eleanor MacLean, and carried that the stipend for Nancy Anderson, Program Planner, previously approved for $1000 at the meeting on June 5, be increased to $1500 and that two travel stipends of $750 each be established for two Sci-Tech Division members to attend the Global 2000 Conference, the criteria for which to be determined by the Awards Committee. Judith Seiss made a motion, seconded by Nancy Anderson, and carried that the Division actively seek vendor participation in the Global 2000 awards.

A motion was made by Billie Connor, seconded by Nancy Anderson, and carried, that up to $2000 be approved to sponsor a Sci-Tech Librarian from a developing country, the award

administered by the Washington DC Chapter, and that the recipient be required to write an article for Sci-Tech News; a further stipulation being that if the Washington DC Chapter does not accept the Sci-Tech Librarian requirement the award plan will revert to the Science-Technology Division to administer.

MISCELLANEOUS

Executive Board members and committee chairs were reminded that all files over five years old that are no longer needed should be sent to the Archivist, Janet Hughes. Announcement of the time and place for the 1999-2000 Division Executive Board Meeting was made once again and the meeting was adjourned at 5:28 p.m.

Billie Connor, Secretary

SCIENCE-TECHNOLOGY DIVISION
ANNUAL BUSINESS MEETING
June 7, 1999

CALL TO ORDER

The Science-Technology Division Annual Business Meeting was called to order by Chair Howard Stephen McMinn at 7:55 a.m. Mr. McMinn announced that each copy of the agenda had a tear-off form to indicate interest in getting involved in the Division.

WELCOME AND INTRODUCTIONS

Officers were introduced. Newly elected officers for 1999-2000, Marsha Saylor, Chair-Elect Elect, and Judith Seiss, Secretary Elect, were introduced. Science-Technology Division members on the Association Board were mentioned, as well as newly elected Division Cabinet Chair-Elect Elect, Doris Helfer, Hall of Fame Award winner Ellen Mimnaugh, and previous Association award winners. Richard Hulser, SLA Board Proctor present, was recognized.

APPROVAL OF MINUTES

A motion was made, seconded and carried that the minutes of the Annual Business Meeting, June 8, 1998, in Indianapolis be approved as published in the August 1998 issue of Sci-Tech News.

REPORT OF THE CHAIR

Chair Howard Stephen McMinn reviewed the Division's excellent programs at the Conference and announced the time and place of the 1999-2000 Executive Board meeting to come. He mentioned the fact that the Division had co-sponsored the Mentoring Program and the Computer Science Roundtable, although not noted in the program. Program Planners for the Division were introduced: Ann Koopman, SLA Conference 2000 in Philadelphia, and Nancy Anderson, Global 2000 Conference in Brighton, England. The Global 2000 Award(s) details will be announced soon. The Division volunteer opportunities abound as always and participation was encouraged. Flyers were on the tables announcing the contributed papers series planned for the Philadelphia Conference. Thank yous were expressed to: Eleanor MacLean for the draft Bylaws revision and for researching Division history; to Pamela Enrici for the outstanding Minneapolis Conference program; to Wei Wei for excellent fundraising results, and to Committee Chairs and members for their hard work.

OFFICER AND COMMITTEE REPORTS

Treasurer: Janet Hughes, Treasurer, reported that the Division has installed Quicken for its financial reports as requested by the Association. The financial report for the 1998-1999 was presented and accepted.

Committee Chairs: Committee Chairs were introduced and given an opportunity to report to the members present.

AWARDS

Luis Herrera received the International Award in 1998 but was unable to attend until the 1999 Conference. Cristina Lewis, from India, was the recipient of the 1999 International Award. David Landry, Student at Louisiana State University, was announced as the Student Stipend Award recipient. Mr. Landry could not be present at the Annual Business meeting to read his essay.

The "Impossible" Award and a gift were presented to Pamela Enrici for the outstanding 75th Anniversary program she put together for Minneapolis. Nancy Anderson, Past Chair, also presented a gift to Ms. Enrici for excellent work..

Many thanks were expressed to the wonderful sponsors that made possible the outstanding Minneapolis programs and the 75th Anniversary celebration. Members were encouraged to thank the sponsors individually when visiting the exhibits..

OLD BUSINESS

None. Ellis Mount will step down as Sci-Tech News Editor after the November issue, and Bonnie Osif, currently Advertising Manager, will become Editor. A drawing was held to select one of the sponsors to receive a gratis ad in Sci-Tech News; Wiley Publishing was the winner. Howard Stephen McMinn gave the gavel to Wei Wei, Chair-Elect.

CHAIR-ELECT'S COMMENTS

Chair-Elect Wei Wei thanked Howard Stephen McMinn for the wonderful job he did during the year and presented him with a gift. She expressed thanks to the Division's sponsors and asked that everyone visit their booths, thank them, and buy their products, as possible. She thanked the Division's members for giving her the opportunity to serve. Goals for Wei-Wei's term of office are: to think globally and attempt to recruit people from different backgrounds; to expand and retain participants in the Division; to refine programs and professional development classes and encourage participation in the contributed papers program; and to update the strategic plan to include a marketing plan. Wei Wei stressed the help needed from sponsors and volunteers in order to achieve these goals. She wished for everyone a good conference in Minneapolis.

NEW BUSINESS (CONTINUED)

Chair for 1998-1999, Howard Stephen McMinn, asked for further new business from the floor. There being none, he introduced representatives present from the Division's Conference sponsors: OCLC, ISI, CRC, CISTI and IHS. Thanks were expressed by a round of applause from the members.

ADJOURNMENT

A motion to adjourn was made, seconded and carried. The meeting adjourned at 8:45a.m.

Billie Connor, Secretary

SCIENCE-TECHNOLOGY DIVISION
MINUTES OF MEETINGS
MINNEAPOLIS, MINNESOTA
EXECUTIVE BOARD MEETING
June 9, 1999

The meeting was called to order at 11:37 a.m. by Chair, Wei Wei.

Present were:
Nancy Anderson, Chair, Nominating Committee
Virginia Baldwin, ALA/ACRL/STS Liaison
Billie M. Connor, Chair, Public Relations
John Cruickshank, Chair, Strategic Planning Committee
Pam Enrici, Chair, Professional Development Committee
Suzanne Fedunok, Chair, International Relations Committee
Bonny Hilditch, Parliamentarian
Janet Hughes, Treasurer, Archivist
Theo Jones-Quartery, SLA Affirmative Action Committee Liaison
Ann Koopman, 2000 Program Planner
Polin Lei, MLA Liaison
Mary Frances Lembo, Chair, Student Relations Committee
Howard Stephen McMinn, Past Chair
Ellis Mount, STN Editor
James Manasco, Member, several committees
Bonnie Osif, STN Editor-designate
Jean Piety, Technical Standards Committee Liaison
John Piety, Member, Bylaws Committee
Marsha Saylor, Chair-Elect
Judith Siess, Secretary
Nathalie Thirlwall, Chair, Membership
Wei Wei, Division Chair
Karola Yourison, Member, Nominating Committee

The minutes of last year's board meeting were approved as published in *Sci-Tech News*, J Siess making the motion and M Saylor seconding.

Chair's Report, Wei Wei

She has made committee assignments for 1999-2000 and these were circulated among the board for any corrections or additions. She then thanked J Manasco for accepting so many assignments and J Piety for his help with the Bylaws Committee.

Old Business

Wei reported on the current status of the bylaws changes. At the last outgoing board meeting (Sunday, 6 June 1999), the board voted on the one

remaining issue, the mission statement. It was decided that there would be a deadline of 7/15 for comments to E MacLean. The executive board will discuss the issue via a listserv to be set up by A Ren. They will then vote by conference call. Note: all of the other amendments were approved by the outgoing board on Saturday, 5 June.

It was announced that B Osif will be the new *Sci-Tech News* editor and that E. Mount will continue to do book reviews.

The outgoing board voted to establish two new awards for Global 2000 (Brighton, England). They will consist of $750 each for two Sci-Tech Division members. The criteria will be decided by the Awards Committee. In addition, the Division will support N Anderson (Division Planner for Global 2000) with $1500 and provide up to $2000 for a librarian from a developing country to attend. This will be handled through the Washington, DC chapter.

Announcements

It was announced at Division Cabinet that the 2008 Annual Conference will be in San Diego.

P Enrici offered to donate airline miles for a librarian from an underdeveloped country to attend Global 2000.

The Association announced that next year's Who's Who will be published on the web, in a members-only area, in addition to being available in print. The preliminary program for the 2000 Conference will be published as sixteen-page highlights, not the complete program. The complete program will be on the website. The program planners are less than enthused. A suggestion was made that there should be action toward having member oversight for the Association's migration to a virtual association. Exhibit hours for the 2000 conference will be extended to 6:00 p.m. and exhibits will be open Monday, Tuesday, and Wednesday (not Sunday).

Wei need committee chairs to send their budget requests and objectives (only one or two objectives, no more) to her by 10 September. She will send out a reminder 1 September.

A listserv has been set up for the full board. The address is <slast-l@scilibx.ucsc.edu>

E Mount announced that the deadline for the August issue *of Sci-Tech News* is 10 July.

New Business

Nominations Committee: N Anderson proposed Karola Yourison, Billie Connor, and Richard Hulser as members. J Hughes moved to accept this list, M Saylor seconded. The committee was approved.

Annual Conference 2000, Philadelphia: A Koopman announced that the program committee is: P Enrici, J Manasco, K Yourison, Jamie Zingaro, and Jill O'Neill. The Division will sponsor a contributed papers session, an academic roundtable, a computer literature roundtable, and sessions on ergonomics (When Work Hurts), the history of women in science (development of science librarians, mentoring, career development, with PAM Division), and bibliographic citation management software (perhaps a training session, featuring ISI ResearchSoft's three products). They plan a reception at the Independence Seaport Museum, a tour to ISI (with ISI providing the transportation), and a tour of the Hagley Museum, an open-air industrial area (with Museum Division). The local chapter, with $50,000 from Dow-Jones, will sponsor a conference-wide reception at the Franklin Institute. The headquarters hotel is the Marriott, connected to the convention center by a walkway. The website is at <http://jeffline.tju.edu/~koopman/scitech2000>.

Continuing Education Courses: P Enrici and A Koopman. This year's patents I class had 20 people registered. They suggest continuing this course (breakeven is 10-12 people). This was approved by the board. Enrici and Koopman also suggested a half-day patent update to be held every other year, beginning in 2001. N Anderson suggested making the CE courses a membership recruitment opportunity by having someone plug the Division at the beginning of the day. Enrici and Koopman are also thinking about a possible CE course on bibliographic citation management. They will continue to work on this.

Sci-Tech News: The board discussed how to market STN and how to get more articles for it. E Mount said there aren't that many pages available for articles. B Osif suggested adding some columns, (such as international issues, students, etc.) to rotate among issues (*i.e.*, not appear in every issue). This will be discussed in more detail on the board listserv. B Osif will contact other divisions (such as Transportation) to join the *STN.*

Membership Recruitment and Retention: N Thirlwall will work with P Lei (MLA liaison) on recruitment. The membership committee consists of J Manasco, Jean MacKenzie, and Jenny Mueller

Alexander. An article will be written for *Sci-tech News* inviting members to talk to their library schools about science and technology librarianship and perhaps a letter to college newspapers. N Thirlwall plans a membership survey on why they joined the Division, why they go to conferences, what CE they would like to see. N. Anderson is going to IFLA in Bangkok and will take some of the handouts from this conference (pens, notepads, etc.). She asked if the board would approve offering up to 20 free one-year *Sci-Tech News* subscriptions to potential members from developing countries at IFLA. It was so moved by J Siess, seconded by J Hughes, and approved unanimously.

Division Strategic Plan: It was decided that instead of updating the 1998 version that was rejected by the executive board, the committee start all over. Wei would like it to contain our mission, vision, environment, and marketing plan and to be very short (no more than 1-3 pages). The committee is to produce the first draft by 10 September. The executive board will then approve it in time for the 10 October deadline for the November *Sci-Tech News.* Wei wants a session at the 2000 Annual Conference to present the strategic plan to the membership.

International Relations Committee is looking for articles for *Information Outlook.*

Public Relations: Wei would like the committee to develop a one-page handout on the history of the Division for distribution at 2000 conference.

Networking/Listserv/Web: V Baldwin reports that there seems to be some confusion between our listserv and that of ACRS. We agreed that the S-T Division publications should have the listserv and web addresses on it. HS McMinn suggested a business card or Rolodex card with only the website, listserv, Division name and logo, to be passed out liberally. V Baldwin asked for clarification of protocols for taking material from other websites and listservs. Permission must be obtained. The issue of a digest version of the SLA-ST listserv, submitted by A Ren, was referred to the listserv for further discussion.

A request by the diversity leadership development program for the Division to actively recruit minorities to apply for committee chairs was referred to the listserv and next year's board meetings.

N Anderson moved for adjournment, M Saylor seconded. The meeting was adjourned at 1:15 p.m.

Respectfully submitted,
Judith Siess, Secretary

Sci-Tech Division Listserv Subscription Information
Virginia A. Baldwin

If you are not already on the Sci Tech listserv, I encourage you to take advantage of the opportunity to be regularly informed of Sci-Tech issues and to contribute to our listserv. Subscription information follows::

To (subscribe or) re-subscribe, send a message to:
majordomo@welles.library.nwu.edu
Please leave the subject line empty. In the body of the message you need to specify your e-mail address and you can also put your name in parentheses after the address, such as jdoe@nwu.edu (Jane Doe). Write only:
subscribe sla-st your e-mail address (your name)
For example:subscribe sla-st jdoe@nwu.edu (Jane Doe)

To learn about other available commands, send a message to: majordomo@welles.library.nwu.edu
Please leave the subject line empty. In the body of the message write only: HELP

Questions about the list can be sent to:
SLA-ST-owner@majordomo.library.nwu.edu

There is a web archive to this list at:
<URL:http://www.library.nwu.edu/cgi-bin/lwgate/SLA-ST>
More information on Majordomo commands can be obtained from:

<URL:http://www.library.nwu.edu/majordomo/info>

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INTERNET:cfvab@ux1.cts.eiu.edu

SLA Science-Technology Division - 1999 Welcomes its New Members
April - June 1999
Nathalie Thirlwall, Chair, 1998-1999 Membership Committee

Judith A Bateman
Catholic University of America
School of Library & Info Science
243 Marist Hall
Washington DC 20064

Susan J Brewsaugh
Boeing-Southern California
W22 H010-B001, 5301 Bolsa Ave
Huntington Beach CA 92647-209

Gerald H Clark
Stanford Law School
Robert Crown Law Library
Nathan Abbott Way
Stanford CA 94305-8610

Eileen M Demmie
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1701 North St
Endicott NY 13760-5598

David L Fisher
4551 Cannington Dr
San Diego CA 92117

Jeanne L Galbraith
42 Warner La
Ronkonkoma NY 11779-2110

Kristin L Holly
BMC Software Inc, Market Research
2101 Citywest Blvd
Houston TX 77042

Karen J Krasznavolgyi
DuPont Pharmaceuticals Co, Info Svcs
Experimental Stn E400/5269
Wilmington DE 19880

Laurie Ortega
US GS EROS Data Center
Don Koulow Memorial Library
Mundt Federal Bldg
Sioux Falls SD 57198

Julie Taminau
3575 Univ St. #506
Montreal PQ H3A 2B1, Canada

Wenjing Wang
860 Halekauwila St #1305
Honolulu HI 96813

Madeline P Windsor
Brookhave Nat'l Lab, Res Library, Bldg.477
477Upton NY 11973

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Nathalie Thirlwall, Client Services Librarian, CISTI,
National Research Council Canada
Phone: 613/998-2360; Fax: 613/993-0747
Internet: nathalie.thirlwall@nrc.ca
Web site: http://www.nrc.ca/cisti

CALL FOR PAPERS -- PHILADELPHIA 2000

Contributed Papers Session
Science and Technology Division

The Science & Technology Division is planning a Contributed Papers Session for the Philadelphia Conference June 10-15, 2000.

ELIGIBILITY:

Any SLA member is welcome to submit an abstract for consideration.

THEME: THE DISTRIBUTED SCI-TECH LIBRARIAN: MODELS FOR REMOTE INFORMATION SERVICES

How are you using new technologies to deliver your services to a distributed audience? Do remote users in the science or technology fields require special services? Are new technologies reshaping the kinds of service you can offer, your staffing patterns, the training your staff requires, or the responsibilities of your department? Do you use a security system to qualify your users for restricted services? How are you integrating your services with licensed content? How do you promote and market your services? How are you measuring and evaluating changing patterns of service use? What challenges have you overcome in creating your electronic services, and what trends do you see in the future for such services?

ABSTRACT:

Submit your proposal in the form of a 300-500 word abstract. Be sure to include the paper's topic, scope, methodology, and conclusions or results.

CRITERIA:

Criteria for review will include relevance to the session theme, and evidence of scholarship. Preference will be given to members of the Science-Technology Division.

DEADLINE FOR SUBMISSION:

OCT. 1, 1999 .

PAPERS:

If your paper is one of the 3 selected for presentation, you will be expected to
1) submit the complete text of your paper to the program convener by March 15, 2000;
2) present your paper at the Philadelphia SLA conference (20 minutes allowed); and
3) allow your paper to be printed in session preprints and/or mounted on the Science-Technology Division's Web site.

SUBMIT ABSTRACT (email preferred) TO:

Ann Koopman
Scott Memorial Library
Thomas Jefferson University
1020 Walnut St.
Philadelphia, PA 19107
E-mail: Ann.Koopman@mail.tju.edu
Phone: 215-503-0441
Fax: 215-923-3203

For additional information about this session, see the planning site at
http://jeffline.tju.edu/~koopman/scitech2000/papers.html

SLA-ST web archives and commands can be found at:
<http://www.library.nwu.edu/cgi-bin/lwgate/SLA-ST/>

1999 INTERNATIONAL SCI-TECH LIBRARIAN AWARD CALL FOR NOMINATIONS

The Science-Technology Division has announced the availability of the following award:

INTERNATIONAL SCI-TECH LIBRARIAN AWARD

The award will be presented at the 2000 SLA Annual Conference in Philadelphia, to be held June 10-15, 2000. A description of the award is shown below:
NOTE: This award has an earlier deadline for nominations than in previous years to allow the recipient time to arrange for attendance at the SLA annual conference.

Description

The International Sci-Tech Librarian Award is an award presented by the Science-Technology Division to a librarian outside the United States and Canada. The purpose of the award is to provide an opportunity for a librarian outside of the United States and Canada to attend the annual SLA Conference. The award will consist of conference registration and airfare, not to exceed $1,000.

The Sci-Tech Division Awards committee reserves the right to withhold the award if a sufficient number of appropriate candidates are not nominated.

Qualifications

* Be a current member of SLA, preference going to members of the Sci-Tech Division.
* Reside and work outside of the United States and Canada.
* Be working currently in a library, information center, library school or other information capacity, prefereably in the sciences or technology area.

Nominations

Self-nominations are encouraged. Send a typed and signed statement including information on the candidates's professional career, professional activities or offices held, special projects or services, publications, and any other related functions that qualify the person for the award.

NOMINATION FORM

DEADLINE FOR FORMS; JANUARY 1, 2000
(Please submit a copy of the form with all application materials)

Nominee_____
Work title_____
Employer_____
Address _____
_____
Zip/Postal Code _____
Country_____
Business Phone (___)_____
Home Phone (___)_____
Fax(___)_____
E-Mail_____
If student, provide school name and graduation date _____:
Your name _____

Signature _____

Your address _____
_____

Return form and materials to:
Janet W. Cambre, Thomas Cooper Library
University of South Carolina
Columbia, SC 29208
RE: INTERNATIONAL SCI-TECH AWARD
Fax: 803-777-4661

Send any other correspondence to (e-mail):
Robin Jourdan, Chair
Sci-Tech Awards Committee
Ford Motor Company
rjourdan@ford.com

ENGINEERING DIVISION

The objectives of the Engineering Division are to provide an association for those having an interest in library and information science as they apply to engineering and the physical sciences and to promote the use of materials and knowledge for the benefit of libraries and other educational organizations.

FROM THE CHAIR

DARLA L. WAGNER

It is "Time to Roll" says Susan DiMattia, President of Special Libraries Association. Now it is "Time to Roll" for the Engineering Division, as courses and meeting planning are presently underway for the "From Independence to Interdependence: The Next Phase in the Information Revolution" for the Special Libraries Association's 2000 Annual Conference to be held in Philadelphia, PA.

Course materials have to be submitted by August 1, 1999, to Central Office. We are thinking about 1/2 day sessions on Standards, Training the Office Assistant to Search the Internet, and Benchmarking for Special Engineering Libraries. If you have other ideas, please forward them to me.

Sessions presently on the grid for the 2000 Conference are:

- Standards Roundtable, Information from the Top Down (CEO's and how these utilize their Information Resources or Library),
- Student Papers Session (papers presented by students to areas of interest for Engineering Libraries, with a stipend of money offered),
- Luncheon/Business Meeting (checking on having Ben Franklin greet you and give a speech about his thoughts on engineers and libraries),
- Tuesday evening event (again with Ben Franklin ringing in the event and presenting a speech about his inventions),
- Meeting for 1999-2000 Board,
- Meeting for 2000-2001 Board.
- Suggestions are WELCOME!

Engineering Division Board for 1999-2000:

Chair - Darla L. Wagner
Raytheon E&C Inc.
Library 01P1
510 Carnegie Center
Princeton, NJ 08540
Ph: 609-720-2279; Fx: 609-720-2343
E-mail: darla_wagner@ccgate.ueci.com

Chair-Elect -Marilyn B. Redmond
SEMATECH Library
2706 Montropolis Dr.
Austin, TX 78741
Ph: 512-356-3442; Fx: 512-356-7118
E-mail:marilyn.redmond@sematech.org

Secretary- Carol H. Reese
ASCE Production
1801 Alexander Bell
Reston, VA 20191
Ph: 703-295-6240; Fx: 703-295-7278
E-mail: creese@nn.asce.org

Treasurer- Donald A. Welch
Bell Helicopter Textron
Eng. Lib. MS 1302, P.O. Box 482
Fort Worth, TX 76101
Ph: 817-280-3608; Fx. 817-280-8688
E-mail:dwelch@bellhelicopter.textron.com

Past Chair: W.Kelly Yuille
EA Engineering, Science & Technology
11019 McCormick Road
Hunt Valley, MD 21031
Ph: 410-527-2469; Fx: 410-771-1625
E-mail: kyuille@eaestcom

AEROSPACE SECTION

Chair: Janna Jantz
Lockheed Martin Astronautics
P.O. Box 179
Denver, CO 80201-0179
Ph: 303-977-5512; Fx: 303-977-6412
E-mail: janna.jantz@lmco.com

IN ADDITION:

Please check the Special Libraries Website, Engineering Division, for a listing of the Bulletin Editor, Membership Chair; Professional Development Chair, Public Relations Chair, Affirmative Action Chair, Division Archivist, Employment Chair, Government Relations, International Relations, Networking Chair, Strategic Planning Chair, Webpage, Assistant Membership Chair, Standards, Awards, Scholarship.

INSPEC TRAVEL STIPEND AWARD GOES TO PAULA SIMON

Paula Simon, currently enrolled in the Master of Library and Information Sciences program through the San Jose State University Southern California program at Fullerton, has been judged winner of the 1998/99 INSPEC Travel Stipend Award, administered by the SLA Engineering Division.

Paula is aspiring toward a career goal related to effective utilization of technology in the library. She has been a student member of the San Diego SLA chapter since 1996.

The topic of Paula Simon's winning essay is the importance to special librarians of marketing themselves and their library to their clientele. She was honored at the Engineering Division annual business meeting held during the June 5-10, 1999 SLA Annual Conference in Minneapolis, Minnesota.

The $500.00 INSPEC Travel Award assists library school students toward payment of expenses incurred while attending the annual Special Libraries Association conference.

Bette Finn, Chair of Awards Committee, Engineeeing Division.. Georgia Tech Library and Information Center, Georgia Institute of Technology, Atlanta, GA 30332-0900
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E-mail: bette.finn@library.gatech.edu

1998/99 INSPEC TRAVEL STIPEND AWARD WINNING ESSAY

MARKETING IN THE SPECIAL LIBRARY ENVIRONMENT

BY PAULA SIMON (psimon@wahoo.sjsu.edu)

This essay will examine the importance to special librarians of marketing themselves and their library to their clientele.

Thanks to the changing climate of corporate culture, it is no longer valid to assume "that library services are valued" (Powers, 1995, p. 490). Special libraries face increasing competition for the providing of information services from the Internet, information brokers, and outsourced commercial online products (Brown, 1997, & Powers, 1995).

As a staff support unit, a special library may suffer from the problem of "low user awareness and understanding of what services" (Sterngold, 1982, p. 254) the special library provides. The special library itself might not understand the "real needs, priorities, and functions of different user groups and the organization as a whole" (Sterngold, 1982, p. 254). If the special library is not an integral information source in the organization, the organization might view the special library as expendable (Sterngold).

Internal marketing is the key to overcoming these problems (Sterngold, 1982). "Marketing is a planned approach to identifying, attracting, serving, and gaining the support of specific user groups in a manner that furthers the goals of both the SLIC and the organization" (Sterngold, 1982, p. 254).

So, in order to remain/become viable in the organization at large, the special library must identify and target specific key user groups in order to meet the goals of both the organization at large and the special library (Sterngold, 1982).

The special library must plan and develop their resources in order to meet the targeted user groups' information needs by creating a marketing plan.

The marketing plan, which is product-specific, or target-market specific, identifies marketing objectives in a quantitative fashion (Wood, 1988, p. 105) and outlines "strategies for achieving those objectives" (Wood, 1988, p. 105). An example of such a strategy might be: Increase online searches performed by 50%. These strategies for achieving objectives are composed of "action plans" (Kotler & Andreason, 1987, p. 270). These "action plans" deal with tactical approaches in the following

four areas: product positioning, expenditure levels, the four P's, and allocation (Wood, 1988, p. 144).

Once the offerings of the special library are defined, it is time to communicate and publicize these offerings through promotional activities. Use such tactics as word-of-mouth, give-away items, open house (with lots of free food), free search time, brochures, and email to advertise.

Cultivate strong professional relations with users through networking. Go to lunch with the targeted users and talk up the special library's resources.

Finally, perform evaluation of the special library's services. Note whether an article or patent found by special library personnel led to a discovery (Brown, 1997).

Get the clients involved in the special library evaluation by asking them to complete a client satisfaction survey online from the company's intranet page. The special library could use automatic features of database searching software products to track the number of searches performed in a 6-month period. These are just some of the ways the special library could conduct evaluation.

In conclusion, the challenge for today's special librarian is to plan ahead to become tomorrow's information resource manager so that the special library is integrated into the overall corporate information services and operations. By assuming leadership for the application of upcoming technologies with the vision of achieving organizational goals and objectives, the special library assures a place for itself in the organization both now and into the twenty-first century.

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Sterngold, A. (1982, October). "Marketing for Special Libraries and Information Centers: The Positioning Process." *Special Libraries,*73,254-9.

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ENGINEERING DIVISION, TIME TO ROLL AND PROCEED WITH GETTING THE MEETINGS AND PROGRAMS YOU WANT TO SEE YOUR DIVISION SPONSOR!!

Darla L. Wagner, Chair, Engineering Division, 1999-2000

AEROSPACE SECTION OF THE ENGINEERING DIVISION

The Aerospace Section of the Engineering Division encourages communication and cooperation among information professionals concerned with aerospace, aeronautical and related technologies. In addition, it fosters dialog with entities, such as NASA, the AIAA and other important sources of technical data and bibliographic services.

FROM THE CHAIR

JANNA JANTZ

How quickly time flies! The Minneapolis conference is over, and we are in the planning stages for the 2000 conference in Philadelphia. Each time I attend a conference I come home exhausted, but energized. This may sound like a contradiction, but anyone who has attended a conference knows what it's like to try to absorb new ideas, remember new faces and learn new technologies, while also looking for old friends and trying to keep track of what is happening back home at the office, too. Each year I go to the conference with extra space in my suitcase, and each year I have to carefully chose what I will take home because there is so much good stuff from the conference (notes, program ideas, vendor goodies, business cards etc.).

This year the conference started on a high note with the Engineering Division reception welcoming the Aerospace Section. Our thanks to Kelly Yuille and Don Welch for hosting the event. It was a great way to relax and visit with old friends before the frenzy of the conference began. All of the Engineering and Aerospace functions that I attended were well attended, inspiring and informative. The most difficult thing was trying to decide which programs to attend.

I was disappointed that many of our regular Aerospace Section members were not in Minneapolis, only 24 to 26 members of the section attended the breakfast, though there were 30 people there in all. This is about half the number we have had in the past. Unfortunately, many of the members that I contacted before the conference said they could not come because of budget issues.On a more encouraging note, we had several first timers at the Aerospace breakfast versus first timers who volunteered to help with division activities. Thank you, one and all. I will be contacting you soon. It is always refreshing to have new blood in the organization. My special thanks, too, to AIAA for sponsoring our breakfast. Please take the opportunity to thank them for their support.

Since we are now a section rather than a division, our business meetings are brief, but we did discuss a few items. One was membership. We want to increase our membership whenever and wherever we can, either by getting new members or by having members from other divisions join Engineering/Aerospace as a second affiliation. Eileen Dorschner volunteered to work on membership, too.

We also discussed the George Mandel Award. A winner was chosen this year, but unfortunately, had to decline ... so the award was not given. The following people volunteered to be on next year[a]s George Mandel Award selection committee: Yolanda Malon, Julia Triplehorn, Mary Ellen McMurtrie and Karen Holloway. They will join the past chair, Don Welch, and the chair-elect, Susan Lamanna. Watch this column and the section listserv for criteria on the award and the schedule for nominating colleagues.

I would also like to thank Don Welch for chairing the section last year. Fortunately for us, Don has agreed to continue to write a column for *Sci-Tech News*. If you hadn't heard, he was contemplating "retirement" at the end of the year. He has now decided to continue for at least one more year. Don is also the new treasurer for the Engineering Division, so he will be busy.

Even though it feels as if we have just finished the conference in Minneapolis yet it is

time to begin thinking about Philadelphia. We are looking at potential programs in the areas of electronic journals, mentoring, adding value from the CEO[a]s point of view, like teaching technical librarians how to become business/marketing librarians. Margie Pearson has volunteered to help with programming ideas, so you can contact either one of us with your ideas and suggestions. It may be too late to get them on the program for the Philadelphia conference, but there is always San Antonio in 2001!

Even though much of this column has focused on the annual conference, I would like to encourage communication among all Aerospace Section members throughout the entire year. These are difficult times for the aerospace industry, and most of us are experiencing budget cuts and staff shortages. Let's take the opportunity to support each other. One excellent way to do this is through the listserv. If you have not already subscribed, directions for signing up are available from the SLA home page. You can also notify me if you have division news or issues that you would like to discuss, or if you have news about members that you would like to share. I can be reached by phone at (303) 977-5512. My email address is janna.jantz@lmco.com. Please feel free to contact me at any time. I look forward to hearing from you.

NOTES FROM MINNEAPOLIS
By Don Welch

Lots of stuff was available again from vendors at conference, both for free and by chance. Some were cool. Some were cooler than cool, and the AIAA had pens that were nice ...really, really nice.

A lot of gifts also were provided by vendors as doorprizes at the Engineering Division reception for the section. Kelly Yuille is the one we are to thank for that, too, as well as the vendors, of course. Some of the winners, from the section, were Ei Dorschner, P.L. Parker, and David Purdy. Another from Bombardier also won but due to a lapse in memory she will have to go nameless.

Speaking of the reception, which featured a singer and accompanist (as well as libations and food "on the house"), all the work on that (and all the planning) was done by Kelly Yuille. Stating early in 1998 that she felt Engineering never got the chance to welcome Aerospace into the fold properly, she "coordinated" the reception with Don Welch ... who said recently that she deserves all the credit. "All I did," he said, "was tell her 'Yeah, that's a good idea' and 'Yeah, that's a good idea, too.' She organized a wonderful reception."

Tom DePetro, formerly of Wichita State University, is now teaching at Texas A&M University. (The archives he was keeping for the Engineering Division have been moved formally to A&M as well.)

Dottie Moon and Karen Hollaway also have been elected to the board of directors. Now there are four there who are or were members of the section. Cool!!!!!! (We rule!!!!)

Peter Moon, a member of Engineering and "an associate" of Dottie's, announced in Minneapolis that the directories of the Engineering Division and the Aerospace Section are now online through the web. Check it out!!!

Speaking of directories, a year ago the section was invited to join the Transportation Division in having entries of themselves included in a Transportation Division directory. Well, that directory is available now, and you can get to it on the web as well!

Some of the libraries from the section (but by far not all) are GE Aircraft Engines, the FAA in Oklahoma City, and Embry Riddle Aeronautical University in Florida. The directory is available as a PDF file, and can be found at http://ntl.bts.gov/tld

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MINNEAPOLIS MANIA
By Don Welch

I decided to entitle my contribution as Minneapolis Mania. Keeping to the schedule in Minneapolis was a challenge. Not only were there things that had to be done when they had to be done, but there were also things that beckoned and enticed one - namely me - to forget the reason and agenda for being there!!! --not talking anything illegal here, but there was - as promised - a lot to do in Minneapolis.

As always, I had to juggle the schedule a couple of times. Go now to the exhibits, I'd ask myself, or go later? Go to the program at the Hilton, I'd ponder, or go to the one at the Hyatt? I always seemed to have a decision to make. I felt that I was going to miss something somewhere that I would like to know at work. I gather that a lot of

folks feel that way about conferences, whether it is in Minneapolis this year or in Indianapolis in 98, Boston in '97, or wherever.

Take for example the program the section sponsored this year with Communications, Food Agriculture and Nutrition, and Petroleum and Energy Resources -- MERGER MANIA. I believe we had 60 maybe even 70 professionals come to the program, but there were at least that many seats that were empty, too. Why? Well, choices, I think.

For one, I noticed in something I was e-mailed before the conference that there was a walking tour of downtown scheduled for the same time as the program. The tour included visits to the Minneapolis Municipal Library and the BRW library - a library for engineering firm BRW. There was also a conflict for Engineering/ Aerospace librarians who had to choose between the program and an event scheduled by Elsevier Science, which was having an afternoon tea on June 7 at 3:00 p.m.

The piece de resistance, however, would be a program sponsored by the Library Management Division, featuring Eugenie Prime of Hewlett Packard and Anne Mintz of Forbes -- speaking on "Leading Strategies for Aligning with the Business Core". This was a program that even a speaker for MERGER MANIA said she would have liked to attend, and I don't blame her -- the reputation of Ms. Prime as a speaker is large.

Still, 60 or 70 professionals did came to MERGER MANIA, as I said, and they were not cheated in what they heard - for a couple of reasons.. First, the program ran long (and there was not a program behind it) and they heard more. But, more important the speakers -- Kathy Romano of Lucent Technologies, Ferol Foos of Albemarle Corp. and Corinne Campbell of Boeing -- presented three prospectives on the topic that gave everyone, I think, something to consider, regardless of their situations. Asked about how they and their libraries had dealt either with assimilating other libraries acquired in company mergers or being assimilated in mergers with other companies, the speakers covered the topic from a diversity of viewpoints that covered not only our types of libraries but also industries. I was proud of what they were able to present.

I felt the topic was a good one for corporate librarians, and particularly in aerospace.

As early as June of 1998 (shortly after coming back from Indianapolis), the idea was confirmed as timely by an article I saw in AIR & SPACE. Titled "The Wall Street Decade" the article detailed how the 1990s had witnessed a tremendous number of aerospace industry megamergers. In 1990, there were eight major airframe manufacturers - McDonnell Douglas, Boeing, Rockwell, Martin Marietta, Lockheed, General Dynamics, Northrup, and Grumman. By 1998, there was only Boeing, Lockheed Martin, and Northrup Grumman. Another merger (an aerospace industry merger at that) even made the news while we were in Minneapolis. That's when it was announced that Allied Signal was going to acquire Honeywell.

During the past year, though, the issue also kept coming to the forefront while the program was being prepared for Minneapolis. Sometime in January 1999, I read an announcement in a newsletter at work -- at Bell Helicopter -- that the company was looking for a manager who would provide guidance on mergers and acquisitions. A couple of months after that, someone donated a couple of books to the library titled "The Mergers and Acquisitions Handbook" and "Mergers and Acquisitions From A to Z". Coincidence? I think not. So, I was pleased not only that we had the program in Minneapolis, but also at the information and insight "we" were able to provide those who came to the afternoon program, regardless of the conflicts. That's why I think it's timely that the SLA is going to emphasize quality in 2000 over quantity. That's what I've heard anyway. In Philadelphia, there will be fewer programs and such, and more quality in the programs, though I'd say there hasn't been any sign of current programs lacking in quality either. There always has been quality. Sometimes it may have been hard to find it, but there's been quality programs at conference. I think it's hoped that attendees have less to regret when they can't get to something they feel they missed, either because they were at a good program elsewhere or they were at a bad program that kept them from one that was possibly better. I know from what I've experienced, it's easy sometimes to feel that way. I'm ready to see the effects of the quality push.

See you in Philadelphia!

MATERIALS RESEARCH AND MANUFACTURING DIVISION

Members of the Materials Research and Manufacturing Division share information concerning all phases of materials procurement,production, applications and handling by means of educational activities, cooperative programs, publications and Division sponsored events at annual conferences.

FROM THE CHAIR

SCOTT TRASK

Greetings, Materials Research and Manufacturing Division members. Yes, that's right, the Metals/Materials Division has been renamed.

Let me introduce myself. My name is Scott Trask, and I am the new chair of the Division. I am currently working as an Information Specialist in the McKenna Information Center at Kennametal Inc. in Latrobe, PA. Later in the section I'll take the opportunity to describe my background more fully. But first, let's look at the changes in the Division.

As you may have heard from attendees at the Minneapolis Conference, Metals/Materials Division has changed its name to **Materials Research and Manufacturing Division!** This is just one of the many exciting changes being made to re-energize and expand our division. The board was approached by several people in the materials industry who were interested in joining the Division but were not sure if we were the place for them as they were not involved in the metals industry. We assured them that this was the place for them and at the annual meeting put up the idea of a name change for a vote. New names were bandied about, and Materials Research and Manufacturing Division was chosen in the vote for a new name.

In addition to the new slate of officers, several committees were also formed or continued. These include:

Membership and Recruitment Committee: Bette Finn
Awards Committee: Eleanor Baldwin
Logo and Stationery Committee: Robert Ward
Fundraising Committee: Robert Ward
Bibliography Committee: Tracy Landfried and Connie McEowen
Bylaws Committee: Martha Rhine
Discussion Group Committee: Patricia Cromi
Planning Committee: Nora Tillman
Strategic Planning Committee: Patricia Cromi
Newsletter Committee: Anne Hewitt
Web Committee: Martha Rhine

As you can see, there is plenty of opportunity for all to help and contribute to the Materials Research and Manufacturing Division.

As the division chair, I will be sending out an additional mailing as soon as some of the details are ironed out to give each of you a better idea of where the division is headed. My main focus as I begin my year is to get an active discussion group up and running and to increase division membership.
I am also going to be communicating with all of the committees so that we can get each committee active and working to increase the visibility and effectiveness of our division.

I am pleased to announce that our division has also elected a new slate of officers with Martha Rhine remaining as the treasurer. Officers include:

Chair: Scott Trask
Chair-Elect: Charles Wenger
Treasurer: Martha Rhine
Secretary: Martha Walunis

Thanks to all who are volunteering their time as officers and as committee chairs. I look forward to serving with all of you and to seeing you at Philadelphia 2000!

Scott Trask
V: (724)539-6464; E-mail: trask@kennametal.com

New Members

The Materials Research and Manufacturing Division welcomes its new members:
Bette Finn, Chair, Membership Committee

Rosario Carrion
Cia. De Minas Buenaventura S.A Lima
Carlos Villaran 790-Urb Santa
Lima 13, PERU

Ling Kong
SNC-Lavalin Engineers & Constructors Inc
2200 Lake Shore Blvd W
Toronto, ON M8V 1A4 CANADA

Deborah K. Oberlander
Ferro Corp
7500 E Pleasant Valley Rd
Independence, OH 44131-5592

Bette Finn
Materials Research and Manufacturing Division
Membership Committee
Georgia Tech Library and Information Center
Georgia Institute of Technology
Atlanta, Georgia 30332-0900
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Fax: (404) 894-8190
E-mail: bette.finn@library.gatech.edu

Meet Scot Trask

Perhaps this would be the appropriate place to give you a better idea of my background and my interests. So often members don't really get to know their division officers very well.

I have been at the McKenna Information Center for one and one-half years. The McKenna Information Center is part of the Research and Development division of Kennametal. The Technology Center was completed in 1992 and is part of the corporate campus that includes the Corporate Center and the Administrative Center. There are about 700 people on site, In the Information Center, we have a staff of three: two professionals and one technician. We are available to any of Kennametal's 14,000 employees located around the world. Most of our requests come in by e-mail or telephone and are answered, for the most part, within 24 hours.

My primary responsibility is as a technical information specialist. I am responsible for retrospective and current awareness of international technical, patent and trademark literature of importance to Kennametal. This includes hard materials, tooling systems and machine tool technologies. I also take part in business information requests as needed. Most requests are answered through a combination of access to the various on-line databases to which we subscribe, including Dialog, STN, LEXIS-NEXIS, Dun and Bradstreet, Dow Jones and internal resources.

I am also responsible for the administration of the internal N database system, BRS (Dater), the information center used to maintain its catalog and various standards and corporate reports databases. I am a certified intern ISO auditor, an ISO representative and on the ISO Management Committee.

In the fall of last year I created the information center website of which I am the webmaster. In the past month I also gained the responsibility of Quality Assurance Document Control as our entire quality Assurance Department (three people) all retired. I am currently working with a team of IS and QA managers to implement a company-wide document management system and have also begun a self-paced individualized computer training program in the information center, the Microsoft Office, and Office 97 suite.. This is available to any other employee who would like to travel to the campus. I hope to soon have this networked so that it can be made available worldwide. We have just completed a massive undertaking to get our journal collection (over 500 journals) weeded and organized, along with a vendor change. We are now looking to similarly update the book collection of about 8000 titles (although this is a low priority). Like everyone else, we working furiously to keep our information center and services at the forefront of technology.

My involvement with SLA began in 1995 when my supervisor encouraged me to attend and join SLA. Prior to that, I was only vaguely aware of its existence. I think we are doing a better job of informing students of SLA's existence today. I was simply another meeting attendee until early 1997 when I volunteered to help with the chapter's 75th Anniversary Celebration. I helped with the archive presentation and have since become increasingly more involved. I am also a member of the Solo Division, the Engineering Division, the Information

Technology Division, and the Science-Technology Division. I also belong to the Information Futurists Caucus. Each of these memberships helps me to keep abreast of the changes and advancement in the special library work in my areas of interest. I am looking forward to serving as your chair in the coming year and to the success of the division in the years to come. Please feel free to use e-mail or call with any suggestions or offers of assistance.

I attended my first annual conference in 1998, and I learned the lesson that you cannot do everything that is offered!. While at the conference I was elected as chair-elect of what was then the Metals-Material Division. Next winter I will attend the St. Louis conference and finally the Philadelphia 2000 conference. I am really looking forward to all of the conferences and hope to meet with many of you.

Scott Trask

NEW SCIENCE AND TECHNOLOGY JOURNALS

Earl Mounts, Editor
Linda Musser, Assistant Editor

Algebras and Representation Theory. 1386-923X. Kluwer. v.1, 1998. Quarterly. $263.00. URL: http://www.wkap.nl/journalhome.htm/1386-923X

Algebras and Representation Theory will publish refereed papers relating, in its broadest sense, to the structure and representation theory of algebras, including Lie algebras and superalgebras, rings of differential operators, group rings and algebras, C*-algebras and Hopf algebras (with particular emphasis on quantum groups). The journal will publish high level, significant and original research papers, as well as expository survey papers written by specialists, wishing to present the `state-of-the-art' of well-defined subjects or subdomains. (EM)

Computing in Science and Engineering. 1521-9615. IEEE Computer Society and American Institute of Physics. v.1, 1999. 6/year. $425.00. URL: http://ojps.aip.org/journals/doc/CSENFA-home/

Computing in Science & Engineering (formerly Computers in Physics) presents scientific and computational contributions to the practice of science and engineering in a clear and accessible format. The journal will bring together the disciplines of physics, medicine, astronomy, and other hard sciences which share a common need for efficient algorithms, system software, and computer architecture to address large computational problems. (EM)

Green Chemistry. 1463-9262. Editor: Roger A. Sheldon. Royal Society of Chemistry. v.1, 1999. 6/yr. $412.00. URL: www.rsc.org/greenchem.

This journal will contain research papers, communications, reviews, industrial highlights, patent information, and other news relating to the green manufacturing of chemicals and the chemical industry. (LM)

Hybrid Methods in Engineering: Modeling, Programming, Analysis, Animation. 1099-2391. Begell House. v.1, 1999. Quarterly. $300.00. URL: http://www.begellhouse.com/hme/hme.html

Hybrid Methods in Engineering is a journal that publishes full-length refereed contributions describing significant developments in hybrid numerical-analytical methods, and their application to the solution of practical engineering problems. The main purpose of the journal is to offer a specialized forum for developments in novel hybrid methods for engineering problems. Computer programs will be published if they show a considerable advance, are coded in a widely used programming language, and are of reasonable length and presented clearly. (EM)

IEEE Transactions on Multimedia. 1520-9210. Editor-in-chief: Bing J. Sheu. IEEE. v.1, 1999. 4/yr. $250.00. URL:www.ieee.org/organizations/tab/tmm.html.

This journal will feature research articles on multimedia systems, technology, signal processing and applications. (LM)

International Journal on Algae. 1521-9429. Begell House. v.1, 1999. Quarterly. $585.00. URL: http://www.begellhouse.com/ija/ija.html

The International Journal on Algae will provide world scientists with original studies on the relationship of the study of algae with science, the theoretical and methodological problems of the study of algae, and the history and development of the study of algae. This new journal will encompass the entire field of the study of algae, including: general problems, morphology, anatomy and cytology; reproduction and life cycles of algae; genetics, physiology, biochemistry and biophysics;ecology, oenology, conservation of algae and their role in nature; flora and geography; fossil algae; taxonomy, phylogeny and problems of evolution of algae; new taxa and noteworthy records; and applied studies of algae. (EM)

Journal of Environmental Monitoring. 1464-0325.

Editor: Evert Nieboer.Royal Society of Chemistry. v.1, 1999. 6/yr. $578.00. URL: www.rsc.org/jem.

This new journal is devoted to all aspects of contaminant measurement and exposure assessment. (LM)

Journal of New Seeds. 1522-886X. Food Products Press (Haworth Press). v.1, 1999. Quarterly. $85.00.

The Journal of New Seeds responds to the urgency of producing a new generation of seeds of high productivity and quality for securing stable, diverse, and abundant food supplies around the world. The journal offers access to international coverage of research and development in the entire field, from innovations in seed production, performance, and marketing to seed protection and policy issues. (EM)

New Journal of Physics (NJP). 1367-2630 . Institute of Physics and Deutsche Physikalische Gesellschaft. v.1, 1998-99. Free. URL: http://njp.org/

New Journal of Physics (NJP) is a peer-reviewed, all-electronic journal publishing original research in all areas of physics. The journal's editors and staff are committed to building NJP into the leading scientific journal in its field by publishing articles of outstanding scientific quality that merit the attention and interest of all physicists. NJP is funded by article charges from authors of published papers. (EM)

New Entomological Taxa (NET). 1525-2396. Scientific Reference Resources (SRR). v.1 1999. Monthly. $190.00. URL: http://www.sciref.org/net/

New Entomological Taxa (NET) is designed to provide entomologists with timely and inexpensive access to the literature on new entomological taxa and nomenclature changes. To accomplish this goal, NET catalogues the new taxa of insects, acari, arachnids and myriapods, in addition to parasites and pathogens associated with these groups of arthropods, which appear in the current literature. Nomenclature changes, such as new combinations, new synonyms and taxa of new or revised status are also included. (EM)

Pesticides, People and Nature: Journal of the Rachel Carson Council. 1520-9350. Begell House. v.1, 1999. Quarterly. $144.00. URL: http://www.begellhouse.com/ppn/ppn.html

Pesticides, People and Nature: Journal of the Rachel Carson Council, a nonprofit organization dedicated to furthering our understanding of and sensitivity to the environment, is concerned with communicating a better understanding of the environment, especially with respect to the impact of pesticides and other toxic chemicals. Therefore, the journal will publish articles from the traditional scientific fields of toxicology, biology, chemistry, physics, medicine, environmental sciences, public health; but the journal will also accept articles of high quality from any of those areas of human experience that add to our understanding of and sensitivity to the environment. (EM)

SCITECH BOOK NEWS REVIEWS

Ellis Mount, Selector

The following section consists of 100 book reviews selected from the June 1999 issue of *Sci-Tech Book News*, reprinted with the permission of Book News Inc. This review journal is published four times a year, each issue reviewing over 2,000 new titles in the physical and biological sciences, mathematics, engineering, computer science, technology, and agriculture. For a sample issue and subscription information, contact Book News, Inc. At 5739 NE Sumner Street, Portland, Oregon 97218. Ph: (503) 281-9230; Fax: (503) 287-4485; E-mail: erskine@bookknews.com

You can also reach *Book News* at <http://www.booknews.com>

GEOGRAPHY, HYDROLOGY, ENVIRONMENT

GE300 98-34643 0-13-739889-1
Environmental management strategies; the 21st century perspective.
Crognale, Gabriele. (Prentice Hall PTR environmental management & engineering series; v.5)
Prentice Hall, c1999 474 p. $59.99
Presents an overview of the way that an organization can successfully integrate strategies into every level of its operation. Consultants, chemical engineers, academics, and others present case studies and other information related to such topics as the EPA's enforcement strategy, OSHA safety responsibilities, the environmental audit, risk management and public relations, and the use of computers and ISO 14000 standards.

GE300 98-36772 0-7879-1004-X
Managing for the environment; understanding the legal, organizational, and policy challenges.
Title main entry. Ed. by Rosemary O'Leary et al. (The Jossey-Bass nonprofit & public management series)
Jossey-Bass, c1999 436 p. $32.95
Gives managers, elected officials, students, and concerned citizens tools they need to address environmental issues effectively. Describes current issues in environmental affairs, explains essentials of environmental laws and their implementation, and shows how managers can incorporate environmental management concepts into their organizations. Provides methods for defining and communicating environmental risks to employees and communities, and presents conflict resolution strategies for handling disputes.

PRODUCTION, INDUSTRY, COMMERCE

HD30 98-43644 0-13-795618-5
Statistics for managers using microsoft excel, 2d ed.
Levine, David M. et al.
Prentice Hall, c1999 1069 p. $84.00
Using case studies and chapter review problems, the authors attempt to make statistics and its business applications with Microsoft Excel software as painless as possible. After making the case for what's in it for productivity and quality-minded managers, they ease into Excel functions for analyzing and presenting data, hypothesis testing, regression, and time-series analysis. Appends a math and algebra review, summation notation, standard statistical tables and symbols, special data sets for team projects, and documentation for the CD-ROM files. Indexed by book subjects and Microsoft Excel features. The CD-ROM includes the PHStat statistics add-in for Excel for use in business statistics courses. (CD-ROM included.)

HD2755 1-57444-121-3
Restructuring the manufacturing process; applying the matrix method.
Halevi, Gideon. St. Lucie Press, 1999.313 p. $39.95
Describes the Matrix Manufacturing Method, a new philosophy of manufacturing management, and gives practical suggestions for bringing its concepts into reality. Outlines the decision-making process to make the system work, and provides numerous case studies and examples of implementation at all levels of management and production. The method presented incorporates the engineering stages into the production management stages of the manufacturing cycle, allowing crucial decisions to be made at the time of execution by qualified professionals employing flexible data.

HD9697 99-10794 1-58053-023-0
Visual telephony.
Daly, Edward A. and Kathleen J. Hansell. (Artech House telecommunications library)
Artech House, c1999 278 p. $49.00
Explains how to install and manage a visual telephony system in corporate, medical, legal, sales, and educational environments, with discussions on applications and benefits of teleconferencing, distance education, and telemedicine. Part I covers benefits, system components, and potential providers. Part II details applications and typical installations, and Part III provides details on equipment and environment, with chapters on cameras, display, audio, control systems, and site preparation. Part IV discusses networking aspects, and Part V looks at cost justification and financial analysis. For project managers, consultants, and sales and marketing professionals in the industry.

SCIENCE (GENERAL)

Q121 98-39014 0-8160-3123-1
The Facts on File encyclopedia of science, technology, and society; 3v.
Volti, Rudi. (Facts on File science library)
Facts on File, Inc., c1999 1158 p.
$225.00
This three-volume reference presents science and technology in the context of historical and social dimensions. It deals not only with theories, discoveries, artifacts, and systems that have stood the test of time, but also with those that have failed. Each of the approximately 900 detailed entries connects a scientific or technological subject with its social causes and consequences, identifying how such changes have modified our lives, and emphasizing how outcomes have been both positive and negative. Also covered are controversies and contemporary issues (such as extraterrestrial life, genetic screening, and mammography) and the roles they have played in scientific growth. Contains b&w illustrations and diagrams.

MATH, COMPUTERS

QA9 98-44066 0-7503-0427-8
Handbook of fuzzy computation.
Title main entry. Ed. by Enrique H. Ruspini et al.
IOP Publishing, Inc., c1998 -- p. $395.00
The third in a series of reference works dealing with computational intelligence methodologies,that is, computational approaches stressing approximation of essential aspects of system behavior and emulation of various cognitive and biological mechanisms. Topics include background information and motivational considerations; basic concepts; various fuzzy modeling approaches; hybrid approaches; software and hardware tools; and various applications such as control, robotics, system optimization, telecommunications, information retrieval, and medical diagnostics.

QA76.76 98-26914 0-7923-8212-9
Foundations of knowledge systems; with applications to databases and agents.
Wagner, Gerd. (Kluwer international series on advances in database systems)
Kluwer Academic Pubs., c1998 296 p.
$120.00
This textbook defines the principles, major components and limitations of database and knowledge systems, and discusses the fundamental issues of information update, knowledge assimilation, integrity maintenance, and inference-based query answering. It begins with the foundations of relational and object-related databases, then presents an in-depth treatment of deduction and reaction rules as well as generic knowledge systems capable of handling fuzzy, temporal, confidential, and unreliable information.

QA76.9 98-25204 0-7923-8198-X
Feature selection for knowledge discovery and data mining.
Liu, Huan and Hirosi Motoda. (Kluwer international series in engineering and computer science; 454)
Kluwer Academic Pubs., c1998 214 p.
$125.00
Overviews methods developed since the 1970s for representing, processing, and extracting knowledge for various applications from the increasingly vast accumulation of data made possible, perhaps inevitable, by the spread of computers, and constructs a general framework within which to examine and categorize the methods. Presents simple examples to show the essence of representative feature- selection methods, compares them using data sets with combinations of intrinsic properties according to the objective of selecting features, suggests guidelines for using different methods under various circumstances, and identifies new challenges to research in the field. A

reference for researchers in machine learning, data mining, knowledge discover, or databases, or a supplementary text for courses on those areas.

QA76.9 98-43437 0-201-43315-X
Managing knowledge; a practical web-based approach.
Applehans, Wayne et al. (Addison-Wesley information technologyseries)
Addison-Wesley, c1999 115 p. $29.95 (pa)
The authors demonstrate how to evaluate content in the context of corporate goals, determine what information should be included and excluded in a knowledge management implementation, and create a Web- based knowledge management strategy to support critical business processes. They also address cultural, political, and organizational barriers to the successful implementation of a knowledge management strategy, and how to overcome them.

PHYSICS

QC39 98-31681 0-8493-8347-1
The measurement, instrumentation, and sensors handbook.
Title main entry. Ed. by John G. Webster. (Electrical engineering handbook series)
CRC Pr., c1999 -- p. $129.95
Describes the use of instruments and techniques for practical measurements required in engineering, physics, chemistry, and the life sciences. Includes 154 contributions from scholars and engineers on sensors, hardware, software, information processing systems, automatic data acquisition, reduction and analysis and their incorporation for control purposes. Topics include measurement characteristics; radiation, time and frequency measurement; solid, fluid, and thermal mechanical variables measurement; electromagnetic, spatial, optical, chemical, and biomedical variables measurement; signal processing; and control.

CHEMISTRY

QD39 0-13-081246-3
Software development; building reliable systems.
Hamilton, Marc. (Enterprise computing series)
Prentice Hall, c1999 357 p. $39.99
This guide to developing successful software projects focuses on the three elements of people, processes, and technology. The author addresses such issues as streamlining infrastructures, retraining programmers, choosing tools, and implementing service level agreements. The concepts presented were developed on mid- to large-size software projects involving five to 50 engineers.

TECHNOLOGY (GENERAL)

T55 98-43298 0-86587-636-3
Industrial safety management; a practical approach.
Daugherty, Jack E.
Government Institutes Inc., c1999 667 p. $79.00
A hazardous materials consultant aids managers responsible for establishing a safe, healthy, and legally compliant workplace. While the initial chapter is on safety management theory, the main focus is on safety management realities and improvement strategies through hazard and operability (HAZOP) analysis, safety procedure development, auditing, accident/incident investigation, human factors and ergonomics management, other prevention and training approaches, and emergency situation management. The author also discusses the Occupational Safety and Health Act (OSHA), and why companies should care about off-the-job employee issues. Includes sample forms, checklists, and charts.

T57 98-28765 0-8493-7001-9
The information system consultant's handbook; systems analysis and design.
Davis, William S. and David C. Yen.
CRC Pr., c1999 765 p. $99.95
A reference for systems analysts and designers and information system consultants on underlying principles, specific documentation, and methodologies. Covers gathering information and solving problems, planning and managing projects, analyzing systems, identifying alternatives, designing components, and operation and maintenance. Considers such aspects as common tools and techniques, outsourcing or subcontracting development work, the year 2000 problem, the shift in analysis and design to end users, and effective communication techniques for programmers and other specialists. The glossary includes page references, but no guides to pronunciation.

T58 98-44765 0-13-096018-7
Web-based management for the enterprise.
Harnedy, Sean J.
Prentice Hall, c1999 389 p. $55.00 (pa)
A guide to managing enterprise networks by marrying web and conventional standards-based technologies. The author navigates a maze of acronyms and standards, demonstrating how HTTP, HTML, SNMP, DMI, CMIP, TMN, WBEM, Java and UML work together in a unified Web-based network and systems management model. Includes a lot of applets, HTML code, and references to relevant web sites. Intended for developers, IT decision-makers, and other managers.

ENGINEERING (GENERAL, CIVIL)

TA166 99-60088 0-12-322735-6
Human performance and ergonomics.
Title main entry. Ed. by P. A. Hancock.
(Handbook of perception and cognition)
Academic Press, c1999 397 p. $79.95
An account of how the context of performance is crucial to understanding behavior. It begins with research in human factors and engineering, with application to the real world environments, methodological concerns, and rumination on current and future trends. It then discusses how technology has moved from being designed to help human physical survival to helping to provide quality of life improvements. Finally it examines the fit between human and environment as a dynamic interaction and suggests teamwork for integration of cognitive, behavioral, and affective components.

TA345 98-38057 0-8493-2093-3
Distributed computer-aided engineering; for analysis, design, and visualization.
Adeli, Hojjat and Sayjay Kumar. (CRC series on computer-aided engineering)
CRC Pr., c1999 239 p. $89.95
Presents distributed algorithms for three fundamental areas of engineering: finite element analysis, design optimization, and visualization. Topics include: a mixed computational model for GA-based structural optimization of large structures on massively parallel distributed machines; distributed genetic algorithms for design optimization; and concurrent animation of seismic response of large structures in a heterogeneous computing environment.

TA350 98-45743 0-8247-1941-7
Influence functions and matrices.
Melnikov, Yuri A. (Mechanical engineering; 119)
Marcel Dekker, c1999 469 p. $185.00
Wishing to popularize the use of influence (Green's) functions among students of engineering and applied sciences, the author demonstrates the function's uses in classical problems of applied mechanics, as well as problems related to fluid flow, acoustic, electromagnetism, heat transfer, and elasticity. Boundary value problems; bending, natural vibrations, stability, and contact problems for single- and multi-spanned Kirchhoff's beams; two dimensional problems of potential, and other problems are discussed. The author also provides a list of influence functions and matrices.

TA418 97-26505 0-88173-284-2
Manual on experimental methods for mechanical testing of composites, 2d ed.
Title main entry. Ed. by C.H. Jenkins.
Fairmont Pr., c1998 264 p. $109.00
Describes practical details involved in applying various experimental techniques to composite materials and composite structures. First introduces basic theory relating to composite material mechanics, as well as specific tools utilized in strain measurement, then presents fundamental techniques, followed by example applications, including methods for optical, acoustic, thermal, and damage analysis. Includes a list of ASTM specifications relevant to mechanical testing on composite materials.

TA418 97-80287 1-85312-541-5
Thermomechanical crack growth using boundary elements.
Prasad, N.N.V. (Topics in engineering; v.34)
Computational Mech., Inc., c1998 194 p $115.00.
Describes the dual boundary element method (DBEM) for steady-state and transient thermoelasticity, and its application to the analysis of mixed-mode crack problems in linear elastic fracture mechanics. Contains chapters on thermoelasticity and fracture mechanics, boundary integral equations, the dual boundary element method applied to steady state and transient thermoelasticity, the effect of thermal singularities on stress intensity factors, and thermomechanical fatigue crack growth. No index.

TA418 98-31135 0-7923-5309-9
Thermomechanics of composites under high temperatures.
Dimitrienko, Yu. I. (Solid mechanics and its applications; v.65)
Kluwer Academic Pubs., c1999 347 p. $159.00
For engineers and materials scientists developing advanced performance thermostable composites, a dozen chapters present new models for the thermomechanical behavior of such materials taking into account specific internal physico-chemical transformations. Dimitrienko (Bauman State Technical U., Moscow) premieres calculation methods for characteristics such as the rate of thermomechanical erosion of composites under high-speed flow and heat deformation of composites with account of chemical shrinkage. Also a first is the solving of the thermomechanical behavior of composites taking internal heat and mass transfer into account. Pays particular attention to the comparison of modeling results with experimental data on mechanical-thermal properties of composites under high temperatures. Appends methodological notes.

TA459 99-17273 0-8247-9965-8
Impurities in engineering materials; impact, reliability, and control.
Title main entry. Ed. by Clyde L. Briant. (Materials engineering; v.15)
Marcel Dekker, c1999 306 p. $150.00
Containing nine contributions comprising a review of the various effects of impurities on the properties of engineering alloys. The first section reviews the problems associated with the presence of impurities in materials and the ways in which the impurity content in material tends to increase with time. The next set of chapters reviews current methods for producing clean materials. The following group of chapters address methods for analyzing for these impurities. In the final group, the effects of impurities on the properties of materials are discussed. A good resource for materials, manufacturing, design, aerospace, automotive, mechanical, and civil engineers as well as materials scientists and product development specialists.

TA641 98-41242 0-8493-2091-7
High-performance computing in structural engineering.
Adeli, Hojjat and Roesdiman Soegiarso. (CRC series on computer-aided engineering)
CRC Pr., c1999 249 p. $89.95
Examines high-performance computing in structural engineering on supercomputers with vectorization and parallel processing capabilities, and presents robust parallel-vector algorithms for analysis and optimization of large three-dimensional structures. Focuses on the optimization of large structures subjected to complicated, implicit, and discontinuous constraints of commonly used codes. Algorithms have been applied to minimum weight design of large steel space trusses and moment-resisting frames, and their performance is evaluated. Includes background material.

TA654 98-40664 0-7844-0399-6
Overcoming barriers; lifeline seismic improvement programs.
Taylor, Craig E. et al. (Technical Council on Lifeline Earthquake Engineering monograph; no.13)
Am. Soc. Civil Engineers, c1999 292 p. $39.00 (pa)
Evaluates seven large organizations that have undertaken significant programs to keep vital services functioning or available after an earthquake. Discusses political and regulatory issues, seismic evaluation approaches, and recommendations. Among the case studies are the Los Angeles Department of Water and Power, and East Bay Municipal Utility District. No index.

TA654 90-5699-644-4
Structural dynamic systems computational techniques and optimization; optimization techniques.
Title main entry. Ed. by Cornelius T. Leondes. (Gordon and Breach international series in engineering, technology and applied science; v.9)
Gordon & Breach, c1999 267 p. $89.00
This third volume in a set of nine volumes on structural dynamic systems contains five contributions addressing the following subjects: optimization of structures subjected to dynamic loads; techniques in multi-criteria discrete optimization of large-scale bar systems; techniques in the optimal design of hybrid laminated composite plates with dynamic and static constraints; variational approach to structural optimization; and optimal design of

three-dimensional axisymmetric elastic structures. Lacks an index.

TA654 90-5699-652-5
Structural dynamic systems computational techniques and optimization; reliability and damage tolerance.
Title main entry. Ed. by Cornelius T. Leondes. (Gordon and Breach international series in engineering, technology and applied science; v.10)
Gordon & Breach, c1999 289 p. $89.00
This fourth volume in the set of nine volumes on structural dynamic systems focuses on the most common causes of failure in structural dynamic systems: the exceeding of maximum system design limits and structural fatigue. Subjects treated are: fatigue crack propagation under environmental actions; techniques in dynamic fracture mechanics; boundary integral equation methods in dynamics and fracture; seismic retrofitting of concrete columns with fiber composite wrap; and reliability aspects in dynamic and structural optimization. Lacks an index.

TA658 90-5699-655-X
Structural dynamic systems computational techniques and optimization; techniques in buildings and bridges.
Title main entry. Ed. by Cornelius T. Leondes. (Gordon and Breach international series in engineering, technology and applied science; v.11)
Gordon & Breach, c1999 286 p. $89.00
This fifth volume in a set of nine volumes addressing structural dynamic systems provides a detailed treatment of the issues and advanced techniques involved in building and bridge structures. The volume's six contributions address techniques in vibration analysis of structural steel frames; techniques in transient analysis of semi-rigid steel frames; some techniques in optimal control of building frames; behavior and analysis techniques of tubular buildings; techniques in combined boundary element/finite strip/finite element analysis of bridges; and nonlinear analysis of thin-walled structures.

TA660 90-5410-281-0
Thin-walled cellular structures; methods for their analysis.
Ignatiev, V. A. and O. L. Sokolov.
A.A. Balkema, c1999 210 p. $66.00
Offers new material in the field, not previously available in English. Presents modeling techniques and numerical methods for problems of complex or very large plate or thin-walled structures, and discusses procedures and numerical methods of more general interest and applicability, such as extracting a specified number of accurate eigenvalues for a complex numerically modeled structure. For those working in civil engineering, aeronautics and astronautics, transportation, marine architecture, defense, and micro- and nanoelectronic structures. No index.

TA683 98-51792 0-8493-7435-9
Concrete beams with openings; analysis and design.
Mansur, M. A. and Kiang-Hwee Tan. (New directions in civil engineering)
CRC Pr., c1999 220 p. $89.95
Compiles information on the behavior, analysis, and design of concrete beams containing transverse openings. Coverage includes pure and combined bending, shear, torsion by itself or in combination with bending and shear, the effects of various sizes and locations of openings, the effects of prestressing on the serviceability and strength of beams with web openings, and design strategies against cracking at openings and ultimate loads.

TA684 97-34497 0-632-03857-8
Structural steelwork; analysis and design.
Ray, S. S.
Blackwell Science, c1998 562 p. $90.00
Provides a prescriptive approach to the design and quality assurance of structural steel members, presented in a systematic manner useful to a design office concerned with developing an efficient, standardized approach. The essential elements of the theory of structures and analysis are discussed, followed by a structured approach to the design of all elements in a building, including connections. Numerous worked examples are included, and principles are illustrated at every stage by sketches. This is a British book, but applicable in the US.

TA705 98-40834 0-8493-0586-1
Geomeasurements by pulsing TDR cables and probes.
O'Connor, Kevin M. and Charles H. Dowding.
CRC Pr., c1999 402 p. $69.95
Examines Time Domain Reflectometry (TDR) applications and provides information on its use as a robust, reliable, and economical production tool.

The goal of the authors is to crystallize the basic principles among the divergent specialties employing TDR technology in geomaterials. They examine applications and case histories such as measurement of moisture content in unsaturated soils, detection of contaminant leaks, measurement of water pressures beneath dams, and deformation and stability monitoring of mines, slopes, and structures. Of interest to soil scientists, mining engineers, geotechnical engineers, and graduate students in engineering and soil science.

TA1570 98-47919 0-8194-3138-9
Practical applications of infrared thermal sensing and imaging equipment, 2d ed.
Kaplan, Herbert. (Tutorial texts in optical engineering; v.TT34)
SPIE, c1999 163 p. $70.00 (pa)
A new edition of a text on infrared measurement basics containing information needed to perform measurements in various applications. It also serves as a reference on examining the validity of new applications. Part I reviews temperature, heat, and heat transfer with emphasis on radiative heat. Part II is an introduction to typical applications for thermal sensing and imaging instruments. No index.

HYDRAULIC ENGINEERING

TC175 98-20532 0-7844-0357-0
Hydraulics of open channel flow.
Montes, Sergio.
Am. Soc. Civil Engineers, c1998 697 p. $99.00 (pa)
Emphasizes the dynamics of the open channel flow by providing a complete framework of the basic equation of fluid motion that is used as a building block for the treatment of many practical problems. Provides coverage of modern techniques as well as an analytical foundation that begins with a description and classification of open channel systems. What follows is the development of the basic equations of motion for steady and unsteady flow, and finally an analysis of varied cases of flow. Appendices include numerical methods, varied flow function tables, and an example of a computer program backwater computation.

TC970 98-25673 0-7844-0323-6
Urban subsurface drainage.
Title main entry. (ASCE manuals and reports on engineering practice; no.95)
Am. Soc. Civil Engineers, c1998 183 p. $42.00 (pa)
Intended as a complement to designated ANSI/ASCE standard guidelines relating to the design, installation, and operation and maintenance of urban subsurface drainage, this manual details and illustrates such crucial topics as planning, system configuration, hydraulics/hydrology, drain envelopes, structural design, and materials. Includes a glossary of the jargon of the field.

ENVIRONMENTAL TECHNOLOGY

TD145 98-31045 0-07-013160-0
Standard handbook of environmental engineering, 2d ed.
Title main entry. Ed. by Robert A. Corbitt.
McGraw-Hill Book Co., c1999 1316 p. $125.00
A reference manual for those engineers involved in designing water, sewerage, and public health protection systems emphasizing biological, chemical, and physical reactions in the environment. Individual chapters provide the most significant technical aspects of air quality control; water supply and distribution; wastewater collection, treatment, and disposal; stormwater management; and solid and hazardous waste management.

TD194 98-51739 1-56670-369-7
Environmental impact statements, 2d ed.
Bregman, Jacob I.
Lewis Publishers, c1999 248 p. $89.95
This environmental consultant and former Deputy Assistant Secretary for Water Quality covers all aspects of the oft dreaded environmental impact statement: purpose, legal basis, preparation process, public participation, and the natural and human-made (okay, he writes "man- made") environment. Though no date is cited for the first edition, this one is noted to contain a new chapter on environmental justice. In lieu of a bibliography, the author appends 57 pages of legal bases for EISs (i.e. the National Environmental Policy Act and regulations to implement NEPA).

TD201 98-8492 0-7844-0342-2
Design of municipal wastewater treatment plants, 4th ed.; 3v.
Title main entry. (WEF manual of practice; no.8.

ASCE manual and report on engineering practice; no.76)
Am. Soc. Civil Engineers, c1998 -- p.
$338.00
This new edition of a three-volume manual provides background information through a review of technical practices and detailed procedures that research and experience have shown to be functional and practical. It contains significant information from several other MOP publications as well as information regarding corrosion control, attached-growth and dual biological treatment. Volume I discusses planning and configuration of wastewater treatment plants; Volume II covers liquid treatment processes; and Volume III addresses solids processing and disposal. CIP cites an additional ISBN: 1-57278-134-3.

TD370 98-24297 0-87371-612-4
Hydrodynamics and transport for water quality modeling.
Martin, James L. and Steven C. McCutcheon.
Lewis Publishers, c1999 794 p. $99.95
Provides an overview of the basic hydraulic principles for application in surface water quality modeling. The book is intended to support instruction in environmental hydraulics, environmental fate and transport in surface waters, and water quality modeling. Part one introduces the basic principles of momentum, mass, and heat transport, and the remaining three parts concentrate on the theory and practice for streams, rivers, lakes, reservoirs, estuaries and coastal areas. Examples and study problems are featured at the end of each chapter.

TD427 98-6321 0-89867-953-2
Critical assessment of radon removal systems for drinking water supplies.
Drago, Joseph A.
Am. Water Works Assn., c1998 341 p.
$195.00 (pa)
With increasing focus on the occurrence of the contaminant radon in drinking water supples as the 1991 proposed radionuclides rule approaches the final regulation, the AWWA Research Foundation reports the findings of one of a series of its studies on this issue. With Riverside, California as the participating public utility, this critical assessment is intended as a guide for utility personnel in evaluating and selecting the most appropriate radon removal technology and requirements. Appends details of the pilot plant study, study data (including quality control/assurance data), and Si equivalent units. Includes numerous tables and figures and 13 pages of acronyms, abbreviations, and symbols. Members' discount price is $125. No index.

TD429 98-19686 0-309-06416-3
Issues in potable reuse; the viability of augmenting drinking water supplies with reclaimed water.
Title main entry. Committee to Evaluate the Viability of Augmenting Potable Water Supplies with Reclaimed Water. National Research Council.
National Academy Press, c1998 263 p. $44.95
Provides answers to questions of potable reuse of reclaimed water, evaluation of potable reuse programs, and drinking water safety. Explores in detail chemical and microbial contaminants, discusses how to assess toxicity and how to manage by-products of disinfection, and covers methods of detection of newly emerging waterborne pathogens. Includes case studies of municipalities around the country. Useful for scientists and engineers and accessible to concerned lay readers.

TD462 98-144003 0-89867-945-1
Chloramine decomposition in distribution system and model waters.
Valentine, Richard Louis et al.
Am. Water Works Assn., c1998 144 p.
$195.00 (pa)
A research paper exploring the feasibility of replacing free chlorine with chloramines for providing disinfecting residuals in water distribution systems. A model is formulated for the prediction of the decomposition of chloramines in drinking water. Kinetic and mass balance studies are detailed. The paper concludes with predictions of monochloramine loss under differing physical and chemical conditions. Member price: $125.00.

TD482 98-36443 0-89867-972-9
Modeling water quality in drinking water distribution systems.
Clark, Robert Maurice and Walter M. Grayman.
Am. Water Works Assn., c1998 231 p. $95.00
The requirements of the Safe Drinking Water Act (SDWA) of 1974 necessitate a greater concentration on the design, operation, and maintenance of U.S. water distribution systems, the authors argue. The techniques, procedures, and information contained here covers modeling the

role of biofilms in effecting microbial activity, improved tank designs that promote mixing and avoid zones of low disinfectant residual, and improved techniques to manage corrosion and disinfectant by-product formation. Member price: $70.00.

TD489 98-41256 0-89867-977-X
Steel water-storage tanks.
Title main entry. (AWWA manual; M42)
Am. Water Works Assn., c1998 145 p. $98.00 (pa)
Provides the water distribution system manager, operator, and consultant with information concerning steel tanks used for the storage of water during water production, treatment, and distribution. Topics include typical capacities and configurations; appurtenances; cathodic protection; coating systems; selecting and sizing water storage tanks; construction considerations; inspecting new tank construction; routine operation and management; professional examination and renovation; and cold-weather operation. Member price $65.00.

TD746 98-31902 1-883767-27-X
High-performance aerated lagoon systems.
Rich, Linvil Gene.
Am. Acad. of Environmental Engineers, c1999 216 p. $99.95
Deals with the design and performance of aerated lagoon systems as low cost and mechanically simple wastewater treatment facilities. By engineering the aerated lagoon for maximum performance, and either combining it with other units or incorporating features borrowed from new technology, the systems are capable of meeting all but the toughest effluent limits. After reviewing the principles of microbiological processes, the guide addresses the control of algae, benthal stabilization, CBOD removal, settling basins, nitrification in both suspended-growth and attached-growth systems, phosphorus removal, and diagnosing performance. No index.

TD793 98-33101 0-8169-0789-7
Emerging separation and separative reaction technologies for process waste reduction; adsorption and membrane systems.
Title main entry. Ed. by editors, Peter P. Radecki et al.
Am.Inst. of Chemical Eng., c1999 319 p. $75.00
Focusing primarily on adsorption and membrane separation technologies, this monograph also contains information on the emerging science of reactor technologies using membranes, adsorption, and reactive distillation. One section of the volume presents a summary of the proceedings of the National Workshop on Process Waste Reduction via Separation Technologies and Separative Reactors held in New Orleans in February 1998, a workshop attended by participants from industry, government agencies, and universities.

TD878 97-14812 1-883767-17-2
Bioremediation.
R. Ryan Dupont et al. (Innovative site remediation technology; design and application; v.1)
Am. Acad. of Environmental Engineers, c1998 -- p. $99.95
This monograph describes the design, applications, and implementation of bioremediation, the ability of certain microorganisms to degrade hazardous organic materials to innocuous materials. Chapters are arranged in six sections, including application concepts; performance evaluation; soil treatment systems; groundwater treatment systems; vapor treatment systems; and integrated technologies. A section of case studies covers material on biofilter vapor treatment, biosparging, bioventing, the Raymond process, and integrated technologies and land treatment. No index.

TD878 97-14812 1-883767-19-9
Liquid extraction technologies; soil washing, soil flushing, solvent chemical.
Michael J. Mann et al. (Innovative site remediation technology; design and application; v.3)
Am. Acad. of Environmental Engineers, c1998 -- p. $89.95
Documents the state-of-the-art, addressing innovative liquid extraction technologies that have been sufficiently developed to use in full-scale applications, and focusing on site remediation and waste treatment. Where appropriate, site investigations and assessments, planning, management, and procurement, and regulatory requirements are examined. Actual case histories are included in order to provide guidance for experienced, practicing professionals, and project managers. No index.

TD879 97-48848 0-471-96805-6
Pesticide remediation in soils and water.

managers. No index.

TD879 97-48848 0-471-96805-6
Pesticide remediation in soils and water.
Title main entry. Ed. by Philip C. Kearney and Terry Roberts. (Wiley series in agrochemicals and plant protection; v.1)
John Wiley & Sons, c1998 381 p. $170.95
Experts from multidisciplinary fields converge on one of the most critical issues in pesticide technology: the safe disposal of pesticide wastes. Fourteen chapters span the scope of the remediation problem from user and industrial standpoints, the feasibility of various disposal options, the effects of elevated pesticide concentrations on rates of soil processes, the major disposal methodologies currently in use (physical/chemical and biological processes), and innovative trends in remediation technology. Regulatory aspects are addressed in the final chapter by US Environmental Protection Agency staffers. The preface refers to this as the first volume in the series, whereas the series description and back cover denote it as vol. 2.

TD898 98-30073 1-57477-066-7
Hanford tank cleanup; a guide to understanding the technical issues, 4th printing.
Gephart, R. E. and Regina E. Lundgren.
Battelle Press, c1999 71 p. $20.00 (pa)
Provides information about critical issues surrounding the cleaning up of some 54 million gallons of radioactive and chemical residue now resting inside 177 underground storage tanks at Hanford Site in Washington state. The authors discuss tank leaks, outline the waste treatment and disposal processes for different types of waste, and provide information about how citizens can get involved in the cleanup process. Includes many diagrams, flow charts, and b&w photographs.

TD1030 98-44343 0-8031-2596-8
ASTM and NACE standards related to underground storage tanks.
Title main entry. Ed. by ASTM. (USTANKS)
A.S.T.M., c1998 171 p. $67.00 (pa)
Supplies ASTM standard G 158, a guide to three methods of determining the corrosion status of buried steel tanks and the suitability of these tanks prior to application of cathodic protection, along with most of the standards referenced therein. Effective use of these test methods can greatly increase the reliability of the corrosion prevention technique ultimately chosen. The NACE standards provided are three recommended practices related to corrosion control. An additional three papers discuss statistical predictions of corrosion failures, leakage potential of underground storage tanks, and statistical analysis of soil characteristics to predict mean time to corrosion failure.

TD1030 98-33647 0-471-17449-1
Hazardous materials and hazardous waste management, 2d ed.
Woodside, Gayle.
John Wiley & Sons, c1999 477 p. $74.95
Offers professionals practical guidance on current definitions of hazardous wastes and materials and their use, management, treatment, storage, and disposal. The updated edition adds coverage of voluntary standards and initiatives, hazardous materials transportation, workplace management of radiation exposure, water quality assessment and management, and process safety management.

ROADS, RAILROADS

TE145 90-5699-159-0
Handbook of road technology, 3d ed; 2v.
Lay, M.G. (Transportation studies; v.8)
Gordon & Breach, c1998 1279 p.
$230.00
New edition of a two-volume set that considers the road transport system in terms of its three major interacting components_the drivers (or controllers), the vehicles (or moving parts), and the road network (or stationary parts). Volume I (157-4), 15 chapters, deals with the technological aspects of transportation, i.e. various aspects of design and planning of vehicles and infrastructure such as road design, management, and pavement materials and performance. Volume II (158-2), 29 chapters, deals with management and operational considerations including management of traffic, driver behavior, maintenance, safety, and environmental factors.

BUILDING CONSTRUCTION

TH145 98-8019 0-471-18349-0
Fundamentals of building construction; materials amd methods, 3d ed.
Allen, Edward.
John Wiley & Sons, c1999 852 p. $89.95
Concerned primarily with the technologies of

technology students covers newly introduced building products, as well as older products that have assumed new and more important roles. The third edition offers new coverage of light gauge steel frame construction, and selection of windows and doors.

TH146 98-35394 0-13-080336-7
Efficient building design series; v.2: heating, ventilating and air conditioning.
Trost, J. (Series: title)
Prentice Hall, c1999 133 p. $40.00 (pa)
A concise guide to HVAC concepts, equipment options, and operating costs. Chapters show how to quantify building heat losses and gains; describe heating-cooling equipment operation; size, select, and detail the components of building heating-cooling systems; integrate heating-cooling components with building structure and construction; and evaluate energy-conserving opportunities and alternatives. Intended for building designers, developers, constructors, managers, occupants, and owners.

TH438 98-25053 0-632-04243-5
Managing risk in construction projects.
Smith, Nigel J. et al.
Blackwell Science, c1999 232 p. $59.95 (pa)
Deals with the practical implementation of risk analysis in project management decisions, with sections on risk management and decision making in the context of a construction project, the human dimension, tools and techniques in the field, and problems of procurement and finance. A final section examines practical application of risk analysis, risk modeling, and simulation, and includes case studies.

TH7687 98-36740 0-632-04276-1
VAV air conditioning systems.
Shepherd, Keith.
Blackwell Science, c1999 340 p. $125.00
Provides an in-depth review of the design, performance and control of variable air volume (VAV) systems. Nine chapters concentrate on single-duct throttling VAV systems and discuss all principle types of systems, including fan-assisted terminal units and dual-duct VAV. They examine in detail the characteristics, design and engineering of VAV, and include comparisons of capital and running costs, energy use and the various alternatives available to the systems designer. The publication is British, thus the specifications, practices and codes are British.

TH9737 0-7506-4229-7
Electronic protection and security systems, 2d ed.
Honey, Gerard
Newnes, c1998 188 p. $37.95 (pa)
Describes the various types of security and electronic protection systems available for domestic, public, and commercial situations, and the factors that influence the use of them. The second edition covers the latest technology in ID, communication equipment, fire alarm wiring techniques, TV camera links, wireless systems, and Paknet.

MECHANICAL ENGINEERING & MACHINERY

TJ217 98-29955 0-7923-8249-8
Fuzzy control of industrial systems; theory and applications.
Shaw, Ian S.
Kluwer Academic Pubs., c1998 192 p. $115.00
Presents the basic theoretical framework of crisp and fuzzy set theory and relates them to control engineering based on the analogy between the Laplace transfer function of linear systems and the fuzzy relation of a nonlinear fuzzy system. Shaw (industrial electric technology, Rand Afrikaans U., Johannesburg) includes generic aspects of fuzzy systems, emphasizing the many degrees of freedom and its practical design implications, modeling and system-identification techniques based on fuzzy rules, parametrized rules and relational equations, and the principles of adaptive fuzzy and neurofuzzy systems.

TJ1185 98-31684 0-8247-0178-X
Machining of ceramics and composites.
Title main entry. Ed. by Said Jahanmir et al.
(Mechanical engineering; 120)
Marcel Dekker, c1999 704 p. $195.00
A reference for engineers and researchers who need information for the selection of machining processes and process parameters, for the development of strategies for manufacture of advanced materials, for the design of mechanical systems that require ceramics and composites, and for the development of new materials. Contain sections on machining of ceramics and ceramic-,

metal-, and polymer-matrix composites, nontraditional machining methods, and inspection and damage evaluation. Gives detailed overviews of machining methods, discusses material removal in various machining techniques with respect to machining-related damage, and describes techniques for detection and characterization of damage.

TJ1185 98-46338 0-8493-1895-5
Metal cutting mechanics.
Astakhov, Viktor P.
CRC Pr., c1999 297 p. $79.95
Outlines the fundamentals of metal cutting analysis, presenting basic scientific factors as well as application potential, and aiming to reduce reliance on empirical approaches. After an introduction covering the history of metal cutting and basic problems requiring solution, the author introduces a system approach. He then covers parallel-sided deformation zone theory, work material considerations, finite element simulation, and methodology of experimental studies. The appendix contains information on cutting tool geometry.

TJ1363 98-38930 0-7844-0318-X
Crane safety on construction sites.
Title main entry. Ed. by Dwight B. Sale. (ASCE manuals and reports on engineering practice; no.93)
Am. Soc. Civil Engineers, c1998 137 p. $39.00 (pa)
Nine chapters developed by an ASCE task committee examine such issues as safety plans, design and manufacture of cranes, training and licensing of operators, supervision of crane operators at the construction site, responsibilities of the various parties concerned, crane safety devices, and transportation, erection and dismantling.

ELECTRICAL ENGINEERING, ELECTRONICS, NUCLEAR ENGINEERING

TK3141 98-38508 0-8493-7414-6
AC power systems handbook, 2d ed.
Whitaker, Jerry C.
CRC Pr., c1999 588 p. $69.95
New edition of a text that focuses on engineering technology essential to the design, maintenance, and operation of alternating current power systems. Covers the design and maintenance of AC power systems for critical-use applications. This edition features an expanded discussion of power-system components, a new chapter on grounding practices, and an appendix covering engineering data and tables. Intended for engineering personnel involved in the specification, installation, and maintenance of electronic equipment for industry.

TK5102 98-23720 0-7923-8207-2
Coding for channels with feedback.
Ooi, James M. (Kluwer international series in engineering and computer science; SECS452)
Kluwer Academic Pubs., c1998 174 p. $97.50
Addresses an approach in communications engineering that is attracting renewed interest after a couple of decades as the efforts to create feedback-free communication for even the simplest channel models have stalled. Presents algorithms for feedback coding and performance analyses of the algorithms, including analysis of the critical computational complexity. Develops the algorithms within an original compressed-error-cancellation framework, in which data are sent via a sequences of messages: the first containing the original data, and each subsequent message containing a source-coded description of the channel distortions introduced on the message preceding it.

TK5102 98-48687 0-306-46054-8
Electromagnetic signals; reflection, focusing, distortion, and their practical applications.
Harmuth, Henning F. et al.
Plenum Press, c1999 213 p. $59.50
Explores the addition of a magnetic dipole current density term to Maxwell's equations, the resulting equations that permit signal solutions, and their practical applications. For instance, the authors show that Snell's law of reflection does not hold and that signals can be designed that yield deviations, and suggest how anti- stealth radars can be designed. Other applications include airborne anti-submarine radar, and the use of focused signals for the improvement of penetration depth and resolution of ground-probing radar.

TK5102 98-4626 0-7923-8131-9
Time-frequency analysis and synthesis of linear signal spaces; time-frequency filters, signal detection and estimation, and range-Doppler estimation.
Hlawatsch, Franz. (Kluwer international series in

engineering and computer science; 440)
Kluwer Academic Pubs., c1998 213 p. $115.00
Proposes a time-frequency analysis of linear signal spaces based on two novel time-frequency representations: the Wigner distribution of a linear signal space, and the ambiguity function of a linear signal space. Develops these methods and applies them to the enhancement, decomposition, estimation, and detection of noisy deterministic and stochastic signals, and shows how linear operators involved in time- frequency filtering can be compressed to finite-dimensional linear spaces. The notion of ambiguity function of a linear signal space is applied to the problem of optimally designing a set of radar pulses.

TK5103 98-18156 0-12-738755-2
Broadband hybrid fiber/coax access system technologies.
Way, Winston I. (Series in telecommunications)
Academic Press, c1999 458 p. $95.00
Presents a thorough quantitative reasoning and analysis of HFC system technologies, including subcarrier multiplexed lightwave transmission systems and components, radio frequency modems for digital signals, and medium-access control protocols proposed by important standards bodies. Eleven chapters cover outlook and overview, components and modules, and systems and protocols.

TK5104 98-41625 0-240-51494-7
Communications systems; engineers choices, 3d ed.
Lewis, Geoffrey E.
Focal Press, c1999 528 p. $75.95
New edition of a textbook originally published in 1988. It explores the rapid convergence that is occurring between satellite and terrestrial services. Topics covered include: current material on coding and modulation systems such as MOBIC; digital SNG systems; mobile phones; MPEG; MPEG4 capabilities and Hypermedia; the Grand Alliance TV system; MUSE and how it is used in Japan; the European and North American Digital Video Broadcasting Systems; MMDS; and Digital Audio Broadcasting.

TK5105 98-31456 0-471-31274-6
Frame relay for high-speed networks.
Goralski, Walter.
John Wiley & Sons, c1999 410 p. $49.99
A guide to using frame relay technology to deliver high-speed network services, detailing how real-world Frame Relay Forum networks are currently implemented. Examines ITU-T standard frame relay, explains how IP and frame relay can work together, tells how to use frame relay for voice and video, and describes proven techniques for integrating frame technologies with existing systems. Assumes familiarity with the operation of modems, LANs, and other basic networking principles.

TK5105 98-33703 0-471-29000-9
Intrusion detection: network security beyond the firewall.
Escamilla, Terry.
John Wiley & Sons, c1998 348 p. $39.99 (pa)
Explains how intrusion detection systems (IDS) fit in with other computer security systems such as encryption and firewalls. Software examples and product descriptions are provided. Chapters cover topics such as traditional security systems, vulnerability scanners, and UNIX system-level IDS.

TK5105 98-20100 0-7923-8200-5
Multicasting on the Internet and its applications.
Paul, Sanjoy.
Kluwer Academic Pubs., c1998 421 p. $125.00
Covers the entire spectrum of multicasting on the Internet, from link- layer to application-layer issues, including multicasting in broadcast and non-broadcast links, multicase routing and transport, and group membership. In-depth consideration is given to describing IP multicast routing protocols, quality of service issues in the network layer, and the relationship between ATM and IP multicast. Protocols and architecture of MBone are described, real-time multicast transport issues are addressed, and transport protocols are compared. Also discusses video multicast and other cutting-edge research.

TK5105 98-7873 0-7803-4707-2
Photonic switching technology; systems and networks.
Title main entry. Ed. by Hussein T. Mouftah and Jaafar M.H. Elmirghani.
IEEE Press, c1999 595 p. $99.95
Reprints 47 journal articles and conference presentations relating to photonic switching technologies, which can provide a functional

advantage in handling the ever-increasing data rates and bandwidth requirements required in telecommunication components, systems, and networks. Based on systems currently in use, weighs the functionality and versatility of photonic technologies used in all-optical networks against their costs and limitations. Highlights some of the pilot systems now on line such as MONET, LAMBDANET, COBRA, and STARNET to demonstrate not only the feasibility, but also the implications of system integration, supporting technologies, and system economics. For practitioners and researchers in electrical engineering.

TK5105 99-17793 0-89006-408-3
Practical multiservice LANS; ATM and RF broadband.
Tunmann, Ernest O. (Artech House telecommunications library)
Artech House, c1999 387 p. $79.00
Provides telecommunications professionals, network managers, and others with an overview of the evolution of telecommunications technologies, as well as predictions of future trends in the long-distance segment, the local loop, the wide area network (WAN), and the local area network (LAN). Covers the integration of voice, data, and video in the long-distance segment, in the enterprise WAN, and in the corporate LAN; places trends in these technologies into context; and offers guidance for an economical transition to multiservice networking. Also highlights the application of the RF broadband technology in the corporate LAN as a forgotten but useful alternative for future networking.

TK5105 1-56592-529-7
Virtual private networks, 2d ed.
Scott, Charlie et al.
O'Reilly & Associates Inc, c1999 211 p. $32.95 (pa)
A guide to setting up systems that can utilize the Internet to access and send information from one network to another, yet remain secure from unauthorized viewers. Four specific solutions are treated, including Layer 2 tunneling through PPTP or L2TP, the Cisco PIX firewall, the AltaVista Tunnel, and Secure Shell. The authors also discuss basics on how VPNs work, how much they cost, and when to use them.

TK5105 98-45282 0-300-07675-4
Web style guide; basic design principles for creating web sites.
Lynch, Patrick J. and Sarah Horton.
Yale University Press, c1999 164 p. $14.95 (pa)
This guide focuses on interface and graphic design principles underlying Web site design, and gives advice on issues ranging from planning and organizing goals, to design strategies for a site, to elements of individual page design. Addresses practical concerns of bending and adapting HTML to the purposes of graphic page design, and discusses issues and constraints of designing complex, multilayered sites. Includes a wealth of technical information on graphics and multimedia, illustrated with b&w photos and examples.

TK5981 90-5699-041-1
High-intensity ultrasonics; theory and industrial applications.
Abramov, Oleg V.
Gordon & Breach, c1998 692 p. $180.00
Abramov (Kurnakov Institute of General and Inorganic Chemistry, Moscow, Russia) addresses the physical and technical aspects of high intensity ultrasound and its applications in industry. Incorporating mostly the results of Russian authors which were published in Soviet and Russian journals, he includes such topics as low amplitude vibrations and waves, the propagation of high-intensity ultrasonics in fluids and solids, nonlinear effects at interfaces in fluids, sources of ultrasonic energy, ultrasonic stacks, measurement of acoustic parameters, high-intensity ultrasound in pyrometallurgy, and materials processing.

TK6677 98-25978 0-7506-9997-3
Video scrambling & descrambling for satellite and cable TV, 2d ed.
Graf, Rudolf F. and William Sheets.
Butterworth-Heinemann, c1998 291 p. $29.95 (pa)
Explains the hows and why of encoding and decoding video signals, for hobbyists, technicians, and commercial TV personnel interested in satellite signals and programming. Emphasis is on theory and circuit techniques, not specific hardware. Explains encoding and decoding systems and the theory and technique of video encryption and decryption, and offers schematics for circuits and experiments. In addition to technical information, historical events in the evolution of

scrambling are discussed, as well as relevant regulations.

TK7870 98-39319 0-7923-8307-9
High-frequency characterization of electronic packaging.
Martens, Luc. (Electronic packaging and interconnects series)
Kluwer Academic Pubs., c1998 158 p. $98.00
Gives insight into how high-frequency characterization of electronic packaging should be done and describes problems that have been tackled, especially in the area of accurate measurements on modern IC packages and in determination of circuit models. Important notions in high-frequency characterization are explained, such as S-parameters, calibration, probing, de-embedding, and measurement-based modeling. Explains high-frequency measurement techniques in general and for electronic packaging, and offers measurement-based modeling algorithms. Of interest to researchers and designers of high-frequency electronic packaging.

TK7872 99-10564 0-89006-898-4
Liquid crystal devices; physics and applications.
Chiginov, Vladimir G. (Artech House optoelectronics library)
Artech House, c1999 357 p. $89.00
Describes physical properties of liquid crystals and preparations of liquid crystal cells that are most important for applications, summarizes basic electro-optical phenomena as a basis for liquid crystal devices, and shows how to control liquid crystal behavior in electric fields. Compares various liquid crystal applications in displays, optical data processing systems, and other applications, and presents recent results in application of liquid crystal devices and related physical phenomena.

TK7874 98-23993 0-7923-8184-X
Formal equivalence checking and design debugging.
Huang, Shi-Yu and Kwang-Ting Cheng. (Frontiers in electronic testing)
Kluwer Academic Pubs., c1998 229 p. $106.50
Reviews the electronic design problems that require logic equivalence checking, describes the underlying technologies that are used to solve them, and presents in detail some novel approaches to verifying design revisions after re-timing or other intensive sequential transformations. Considers symbolic, incremental, and RTL-to-gate verification. Also surveys previous and recent literature on diagnosing and correcting design error, and analyzes the algorithms used in two logic debugging software programs, ErrorTracer and AutoFix, developed by Huang and Cheng. Double spaced.

TK7875 98-41309 0-7923-8306-0
Methodology for the modeling and simulation of microsystems.
Romanowicz, Bartlomiej F. (Microsystems)
Kluwer Academic Pubs., c1998 136 p. $98.00
Gives an overview of problems associated with modeling and simulation of microsystems, and introduces a new methodology, supported by several examples. Addresses the transfer of results from meshed simulation, in the form of extracted parameters, into dynamical lumped-element models that serve to represent device behavior at the system level, and relates these results to computer aided design and modeling of microsystem computers. Contains chapters on data exchange formats, energy-based macro-models, physical parameter extraction, and analog HDL modeling techniques.

TK7881 98-5679 0-7923-8130-0
Applications of digital signal processing to audio and acoustics.
Title main entry. Ed. by Mark Kahrs and Karlheinz Brandenburg. (The Kluwer international series in engineering and computer science; SECS 437)
Kluwer Academic Pubs., c1998 545 p. $145.00
Reflects the spread of digital signal processing from speech, which is a small bandwidth, and telephones, which require only low fidelity, to high quality audio coding and the digital generation and manipulation of music signals. At a level accessible to researchers and informed engineers, considers such aspects as determining audio quality with perceptual measurement techniques, reverberation algorithms, digital audio system architecture, audio signal processing based on sinusoidal analysis and synthesis, wavetable sampling synthesis, signal processing for hearing aids, and principles of digital waveguide models of musical instruments.

TK7882 98-22038 0-471-98253-9
Projection displays.

digital waveguide models of musical instruments.

TK7882 98-22038 0-471-98253-9
Projection displays.
Title main entry. Ed. by Edward H. Stupp and Matthew S. Brennesholtz. (Wiley-SID series in display technology)
John Wiley & Sons, c1999 418 p. $125.00
A reference on projector components, subsystems, and systems in projection technology, examining the merits of different technologies available and outlining underlying principles and practical limitations in the design of a new display projector. Reviews applications, markets, and market forecasts for projection displays, focusing on subsystems and components of the light engine of projection systems, with discussion of image-generating components, lenses, filters, and lamps. Examines advantages and disadvantages of projector architectures, and gives models for predicting the performance of light-valve projectors. Includes a glossary.

TK7887 98-44228 0-7923-8361-3
The design of low-voltage, low-power, Sigma-Delta modulators.
Rabii, Shahriar and Bruce A. Wooley. (The Kluwer international series in engineering and computer science; SECS 483. Analog circuits and signal processing)
Kluwer Academic Pubs., c1999 187 p. $105.00
Presents an analysis of power dissipation in sigma-delta modulators, and describes a low-voltage implementation of a digital-audio performance A/D converter based on the results. The book begins with an overview of the two factors driving the reduction in the supply voltage for VLSI systems: technology scaling and battery life in portable systems. The authors then review metrics for measuring the performance of an A/D converter and the principles of oversampling A/D conversion, explore the limits on power dissipation, and address practical issues in the circuit design and testing of a high-resolution modulator.

TK7895 98-11763 0-7923-8128-9
Advanced techniques for embedded systems design and test.
Title main entry. Ed. by Juan Carlos López et al.
Kluwer Academic Pubs., c1998 290 p. $125.00
For researchers in the design and test communities, system designers, and computer-aided-design tool developers, presents recent development in methodologies and tools for specifying, synthesizing, verifying, and testing embedded electronic systems, which are those characterized by the use of high-level languages as a road to productivity. Among the topics are new languages to specify embedded systems, knowledge- based hardware-software partitioning of electronic systems, an industrial case study of co-design using CASTLE, an automatic formal derivation applied to high-level synthesis, and estimating the physical features of circuits in high-level synthesis based on standard cells.

MOTOR VEHICLES, AERONAUTICS, ASTRONAUTICS

TL725 97-80792 0-12-653010-6
Human factors in air traffic control.
Title main entry. Ed. by Mark W. Smolensky and Earl S. Stein.
Academic Press, c1998 477 p. $75.00
Fourteen contributions explore applied areas of how humans behavior relates to air safety. Topics addressed include systems safety, human perception, information processing, cognitive load capacity, team coordination, selection and training of personnel, work station and software design, and communication issues.

MINING ENGINEERING

TN871 97-31698 0-471-96938-9
Petroleum well construction.
M.J. Economides, et al.
John Wiley & Sons, c1998 622 p. $295.00
A compendium of current ideas and techniques for scientists and engineers in the industry. Covers topics as directional drilling; horizontal, multilateral, and multibranch wells; measuring-while- drilling, logging-while-drilling, and geosteering; drilling fluids; rock mechanics in wellbore construction; casing and tubing design; primary cementing; formation-fluid migration after cementing; evaluating the cement-sheath; remedial cementing; completion fluids and hardware; perforating; inflow and tubing performance; artificial- lift completions; well stimulation; sand stabilization and exclusion; high-permeability fracturing; water control; and designing well

technology, 4th ed.
Title main entry.
John Wiley & Sons, c1999 2196 p.
$295.00
HHHHCondenses the Fourth Edition of the revered 27-volume Kirk-Othmer Encyclopedia of Chemical Technology, which is among the handful of necessary chemical references and is cited in Books for College Libraries, Guide to Reference Books, and Information Sources in Science and Technology. The articles retain not only basic, fundamental information as well as key portions of more advanced material, but also illustrations, tables, graphs, and key references. New topics are incorporated in their appropriate alphabetical order.

TP155 98-41331 0-8493-1205-1
Encyclopedic dictionary of named processes in chemical technology, 2d ed.
Comyns, Alan E.
CRC Pr., c1999 303 p. $99.95
Acknowledging that "the chemical industry is notoriously difficult to define," a UK consultant provides concise descriptions of those chemical technology processes which are known by non-self-explanatory terms: some 2,600, of which 244 were developed since 1992. Updated mainly to include more environmental-friendly processes, and excluding most generic chemical reactions, the cross- referenced, several line entries span "Aachen" to "Z-Sorb" listing developer, patents, references (generally), as well as definition. Appends a product key. First edition published by Oxford U. Press, 1993.

TP155 98-39578 0-8169-0751-X
Guidelines for improving plant reliability through data collection and analysis.
Title main entry. Ed. by Center for Chemical Process Safety of the American Institute of Chemical Engineers.
Am.Inst. of Chemical Eng., c1998 193 p.
$120.00
With the objective of laying the foundation for an industry-wide Plant and Equipment Reliability Database, the Center for Chemical Process Safety demonstrates through examples that data needs are driven by value-added risk and other analyses. Following an overview of the CCPS database's purpose, basic operating concepts and terminology, chapters encompass its structure, applications, and quality assurance issues. Appends guidelines for data collection and submission, sample pick lists for data fields, and a procedure for developing system-level taxonomies. Sponsoring companies and their representatives are listed. Members' discount price is $108.

TP157 98-10447 0-7506-7081-9
Process plant machinery, 2d ed.
Title main entry. Ed. by Heinz P. Bloch and Claire Soares.
Butterworth-Heinemann, c1998 734 p. $95.00
A reference for mechanical, chemical, and plant engineers, offering information necessary for choosing equipment, determining optimum efficiency, and conducting basic troubleshooting and maintenance procedures. Starting with an overview of each class of machinery used in modern processing plants, coverage progresses to practical applications, size considerations, and component descriptions. Standard theory is explained in short-cut formulas and graphs. Vulnerability concerns are also dealt with.

TP1175 98-25870 0-471-24507-0
Organic coatings; science and technology, 2d ed.
Wicks, Zeno W. et al. (SPE monographs)
John Wiley & Sons, c1999 630 p. $125.00
Surveys the principles underlying the production and use of organic coatings and paints. The authors introduce the key properties of coatings, then proceed to cover raw materials, physical concepts, formulations, and applications. They include definitions of industry terminology and troubleshooting guidance. The second edition has been updated and rewritten as one volume instead of two.

TP1180 99-17275 0-8247-1949-2
Handbook of polypropylene and polypropylene composites.
Title main entry. Ed. by Harutun G. Karian. (Plastics engineering; 51)
Marcel Dekker, c1999 559 p. $195.00
A detailed guide to interphase design of polypropylene-based composites, addressing key material ingredients that contribute to suitable thermal and mechanical behavior demanded by end-use requirements. Focusing on the concept of interphase design, this handbook presents 14 contributions arranged to cover the material as if one were formulating individual ingredients into a

polypropylene composite. Topics include modifications of polypropylene resins and microstructure by addition of additives and postreactor processing; the current state of mineral-filled and glass-fiber reinforcement technology; talc-filled polypropylene; the attributes of mica reinforcement; glass-fiber technology; state-of-the-art reactive extrusion and compounding via twin screw equipment; the concept of interphase design; mega-coupled-type chemical coupling; and long-term creep-fatigue properties for glass-fiber-reinforced polypropylene composites. Of likely use to research scientists and technical service engineers.

MANUFACTURES

TS156 94-26857 0-7506-3934-2
Industrial control handbook, 3d ed.
Parr, E. A.
Butterworth-Heinemann, c1998 802 p. $155.00
A fat reference for all the engineers in the shop, providing maintenance with information to fix those midnight breakdowns and planning with methods for calculating possible changes without recourse to advanced mathematics. Arranged in such chapters as sensors and transducers; strain gauges, loadcells, and weighing; optoelectronics; analytical instrumentation; rotating machines and power electronics; digital circuits; computers and industrial control; pneumatics and process control valves; recording and display devices; closed-loop control; mechatronics and intelligent machines; and safety. The text is well supported with diagrams and line drawings. The first edition was published in three volumes: the first by Collins in 1986 and the other two by Blackwell Scientific in 1987 and 1989. The second edition came out in 1995. No bibliography.

TS161 98-49415 1-56670-381-6
Industrial ecology; environmental chemistry and hazardous wastes.
Manahan, Stanley E.
Lewis Publishers, c1999 318 p. $69.95
Treating industrial systems as analogous to natural ecosystems, Manahan (chemistry, U. of Missouri) tackles hazardous wastes from an innovative perspective. The author of several other environmental chemistry texts covers such topics as: the human-made anthrosphere; principles of industrial metabolism; toxicological and biological hazards; and the industrial ecology of waste minimization, treatment, and disposal. Suitable as a reference for professionals in the field and as a text in hazardous waste courses for students with some exposure to general and organic chemistry. The writing is lucid but pedagogical aids are minimal.

TS192 98-42550 0-88415-137-9
Computer-managed maintenance systems in process plants; a step-by-step guide to effective management of maintenance, labor, and inventory in your operation.
Cato, William W. and R. Keith Mobley.
Gulf Pub. Co./Book Div., c1999 166 p. $69.00
A comprehensive guide to computer-managed maintenance systems (CMMSs). The authors begin by showing how to develop a cost justification package for the purchase of a CMMS, then guide the reader through choosing a system and vendor, installation, implementation, and the training process. Appends a comparison of CMMS systems, typical CMMS data fields, and benchmark criteria for world-class organizations.

TS192 98-13431 0-471-17981-7
Planning and control of maintenance systems; modeling and analysis.
Duffuaa, S., et al.
John Wiley & Sons, c1998 371 p. $79.95
Addresses maintenance and repair from an engineering perspective, introducing the concept of total productive maintenance (TPM) as a tool to avert equipment failure. Chapters include maintenance operations and control; preventive maintenance, concepts, modeling, and analysis; and maintenance forecasting and capacity planning. Geared toward engineers, managers, and graduate or advanced undergraduate students in mechanical or industrial engineering.

TS320 98-141358 0-87170-599-0
Tool steels, 5th ed.
Roberts, G.A., et al.
ASM International, c1998 364 p. $190.00
Combines a tutorial explanation with a listing of data on the various steels used to make tools. Introduces the various grades in each class of steel in tables on composition, processing, and performance. Then presents graphically the effects of composition and heat treatment processing

variations, and discusses them in terms of principles of microstructural change. The captions for figures and titles for tables retain the original sources of all the data shown, though many are corporations that either no longer exist or no longer manufacture tool steels. The fifth edition is completely revised, each chapter thoroughly rewritten, a new chapter added on surface modification, and information updated from current engineering references. Descriptions of testing methods have been dropped because they are readily accessible elsewhere, and all references to the traditional three- digit classification system for tool steels has been dropped in favor of the AISI/SAI classification, which is used exclusively. No dates are noted for previous editions.

TS653 98-42176 0-8493-8225-4
Surface engineering of metals; principles, equipment, technologies.
Burakowski, Tadeusz and Tadeusz Wierzchon. (CRC series in materials science and technology)
CRC Pr., c1999 592 p. $99.95
Presents the fundamentals of surface engineering and provides an original classification of the production methods of surface layers. Topics include the development of surface engineering; surface layers; coatings; electron beam technology; and glow discharge methods and DVD technology. Although the text encompasses a background and history of the field, the production methods described include only the state of the art, not older, more widely known techniques. This edition is a revised version of the first Polish edition of the book: Surface Engineering of Metals_Principles, Equipment, Technologies, published by Wydawnictwa Naukowo-Techniczne, Warsaw, 1995.

TS695 98-55665 0-8247-9913-5
Intermetallic and ceramic coatings.
Title main entry. Ed. by Narendra B. Dahotre and T.S. Sudarshan. (Materials engineering; 13)
Marcel Dekker, c1999 489 p. $195.00
Surveys up-to-date techniques for depositing intermetallic and ceramic coatings, and details properties of specific coatings, problems related to adhesion onto various substrates, and potential commercial applications. The nine contributions explore self-propagation, high- temperature reaction synthesis, combustion chemical vapor deposition, thermal spray, and sol-gel synthesis; introduce less well-known topics such as laser synthesis and electrochemical synthesis; address hot corrosion, erosion, and abrasion; and review surface cleaning treatments associated with deposition. For graduate students and researchers in materials science and engineering.

UG485 0-89006-929-8
International electronic countermeasures handbook.
Title main entry. Ed. by F. P."Buck" Dube.
Artech House, c1999 330 p. $99.00
A resource for military and defense-industry decision makers, aiding them in procurement, development, and operational planning with a country-by-country indication of existing offensive and defensive electromagnetic capabilities. Compiles information about land, sea, and airborne threats and countermeasures to defeat them, with entries describing specific systems and equipment, their uses, and manufacturers. This edition adds a new section on ESM and SIGINT systems. Includes color advertising.

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